NBS SPECIAL PUBLICATION 704

U.S. DEPARTMENT OF COMMERCE / National Bureau of Standards

Report of the 70th National Conference on Weights and Measures 1985

The National Bureau of Standards[1] was established by an act of Congress on March 3, 1901. The Bureau's overall goal is to strengthen and advance the nation's science and technology and facilitate their effective application for public benefit. To this end, the Bureau conducts research and provides: (1) a basis for the nation's physical measurement system, (2) scientific and technological services for industry and government, (3) a technical basis for equity in trade, and (4) technical services to promote public safety. The Bureau's technical work is performed by the National Measurement Laboratory, the National Engineering Laboratory, the Institute for Computer Sciences and Technology, and the Institute for Materials Science and Engineering.

The National Measurement Laboratory

Provides the national system of physical and chemical measurement; coordinates the system with measurement systems of other nations and furnishes essential services leading to accurate and uniform physical and chemical measurement throughout the Nation's scientific community, industry, and commerce; provides advisory and research services to other Government agencies; conducts physical and chemical research; develops, produces, and distributes Standard Reference Materials; and provides calibration services. The Laboratory consists of the following centers:

- Basic Standards[2]
- Radiation Research
- Chemical Physics
- Analytical Chemistry

The National Engineering Laboratory

Provides technology and technical services to the public and private sectors to address national needs and to solve national problems; conducts research in engineering and applied science in support of these efforts; builds and maintains competence in the necessary disciplines required to carry out this research and technical service; develops engineering data and measurement capabilities; provides engineering measurement traceability services; develops test methods and proposes engineering standards and code changes; develops and proposes new engineering practices; and develops and improves mechanisms to transfer results of its research to the ultimate user. The Laboratory consists of the following centers:

- Applied Mathematics
- Electronics and Electrical Engineering[2]
- Manufacturing Engineering
- Building Technology
- Fire Research
- Chemical Engineering[2]

The Institute for Computer Sciences and Technology

Conducts research and provides scientific and technical services to aid Federal agencies in the selection, acquisition, application, and use of computer technology to improve effectiveness and economy in Government operations in accordance with Public Law 89-306 (40 U.S.C. 759), relevant Executive Orders, and other directives; carries out this mission by managing the Federal Information Processing Standards Program, developing Federal ADP standards guidelines, and managing Federal participation in ADP voluntary standardization activities; provides scientific and technological advisory services and assistance to Federal agencies; and provides the technical foundation for computer-related policies of the Federal Government. The Institute consists of the following centers:

- Programming Science and Technology
- Computer Systems Engineering

The Institute for Materials Science and Engineering

Conducts research and provides measurements, data, standards, reference materials, quantitative understanding and other technical information fundamental to the processing, structure, properties and performance of materials; addresses the scientific basis for new advanced materials technologies; plans research around cross-country scientific themes such as nondestructive evaluation and phase diagram development; oversees Bureau-wide technical programs in nuclear reactor radiation research and nondestructive evaluation; and broadly disseminates generic technical information resulting from its programs. The Institute consists of the following Divisions:

- Ceramics
- Fracture and Deformation [3]
- Polymers
- Metallurgy
- Reactor Radiation

[1]Headquarters and Laboratories at Gaithersburg, MD, unless otherwise noted; mailing address Gaithersburg, MD 20899.
[2]Some divisions within the center are located at Boulder, CO 80303.
[3]Located at Boulder, CO, with some elements at Gaithersburg, MD.

Report of the

70th National Conference on Weights and Measures 1985

Sponsored by the National Bureau of Standards
Attended by Officials from the Various States, Counties, and Cities, and Representatives from U.S. Government, Industry, and Consumer Organizations
Washington, DC, July 14-19, 1985

Report Editors: Albert D. Tholen
Louis E. Barbrow
Ann P. Heffernan

United States Department of Commerce
Malcolm Baldrige, *Secretary*

National Bureau of Standards
Ernest Ambler, *Director*

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ABSTRACT

The 70th Annual Meeting of the National Conference on Weights and Measures was held at the J. W. Marriott Hotel in Washington, D. C., during the week of July 14-19, 1985. Forty-five States, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam were represented. The theme of the meeting was "Communication - Key to Progress."

Under Chairman Delfino, the theme was emphasized throughout the year including special efforts to coordinate the work of the National Conference on Weights and Measures with the four regional associations, State and local officials, Federal agencies, and industry representatives. As a result of these special efforts, the membership was better informed on the issues and the business of the annual meeting was conducted more effectively.

A major action was the adoption of NBS Handbook 133, "Checking the Net Contents of Packaged Goods." Other important actions were taken regarding method of sale, device control, the National Type Evaluation Program, the National Training Program, net weight compliance, and motor fuels. Details are provided in committee summaries on the following pages.

Special meetings included those of the Task Force on Commodity Requirements, the Task Force on Motor Fuels, the Task Force on Information Systems, Metrologists' Workshops, the Associate Membership Committee, the Scale Manufacturers Association, the Industry Committee on Packaging and Labeling, the State regional weights and measures associations, and OIML Pilot Secretariat 20 (Prepackaged Products).

Reports by the several standing and annual committees of the Conference comprise the major portion of the 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-NBS papers are those of the authors and not necessarily those of the National Bureau of Standards. Non-NBS speakers are solely responsible for the content and quality of their material.

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Missouri	Leslie Greiner	R. Wittenberger
Montana	None	None
Nebraska	Steve Malone	M. Deisley
Nevada	None	None
New Hampshire	Michael Greiner	None
New Jersey	Thomas Kelly	J. Silvestro
New Mexico	Fred Gerk	C. Greene
New York	John Bartfai	R. Andersen
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Washington	William Sullivan	Gilbert Allen
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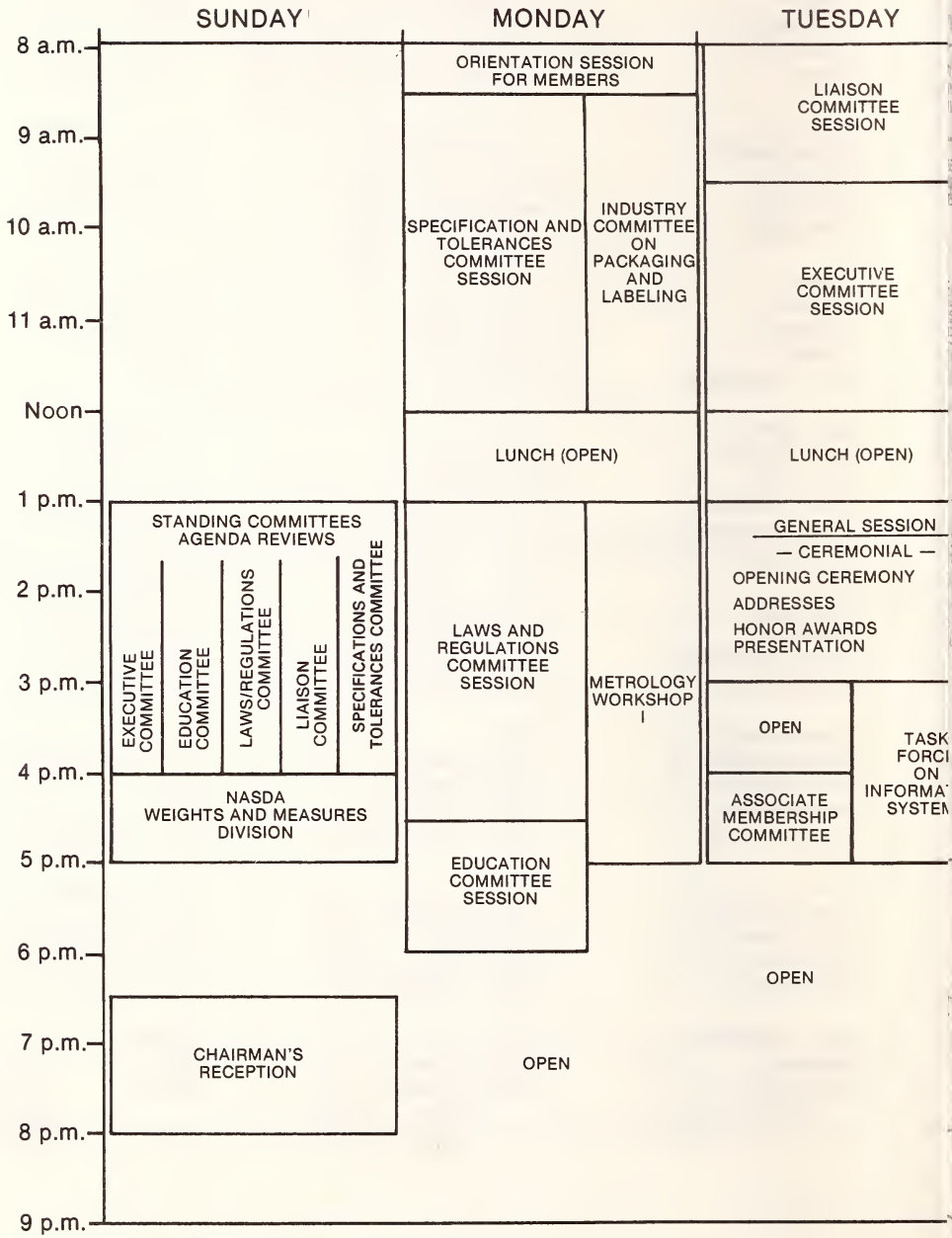
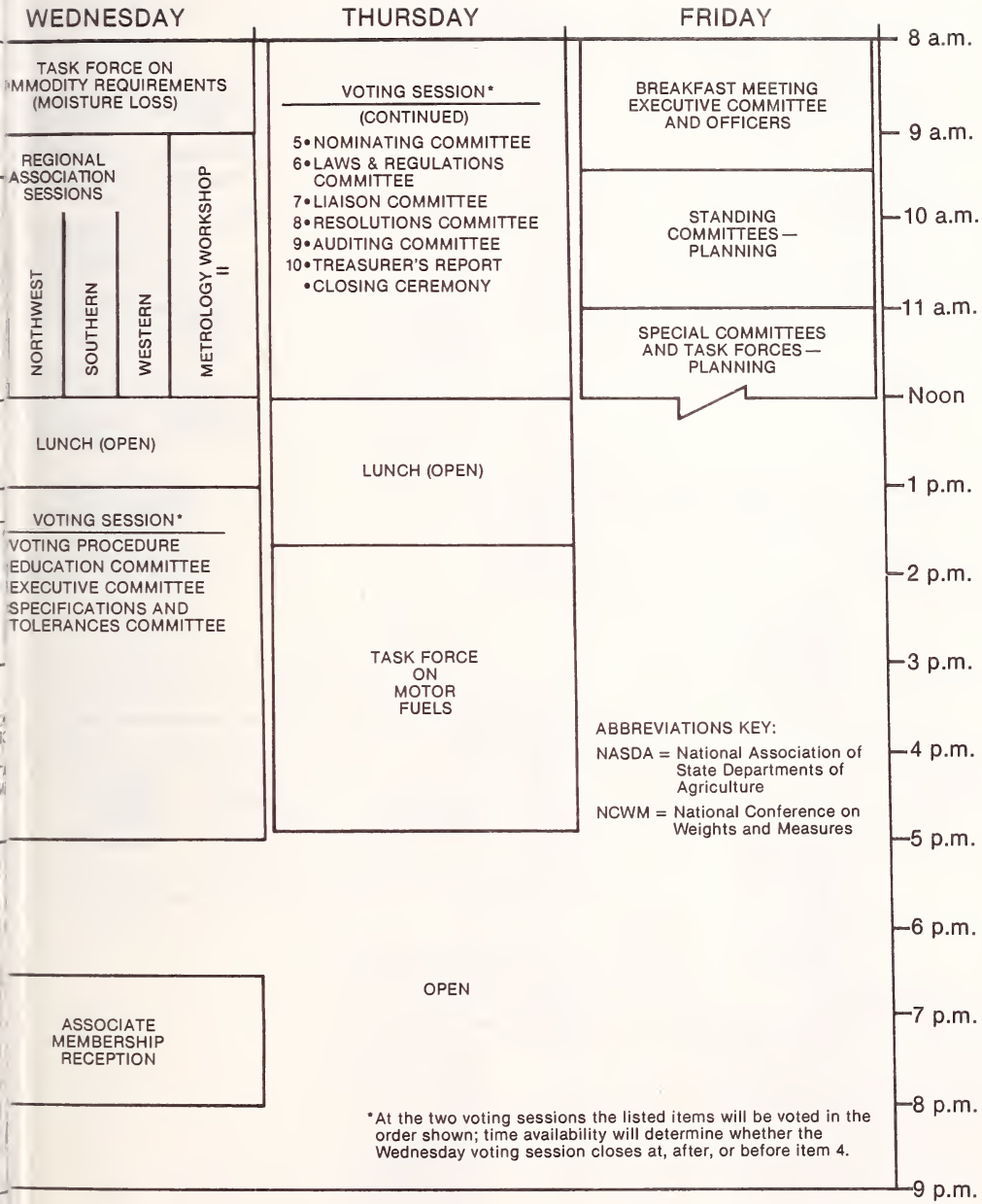
Wisconsin	Robert Probst	None
Wyoming	Victor Gerber	None

NCWM SCHEDULED EVENTS
70th ANNUAL MEETING





*At the two voting sessions the listed items will be voted in the order shown; time availability will determine whether the Wednesday voting session closes at, after, or before item 4.

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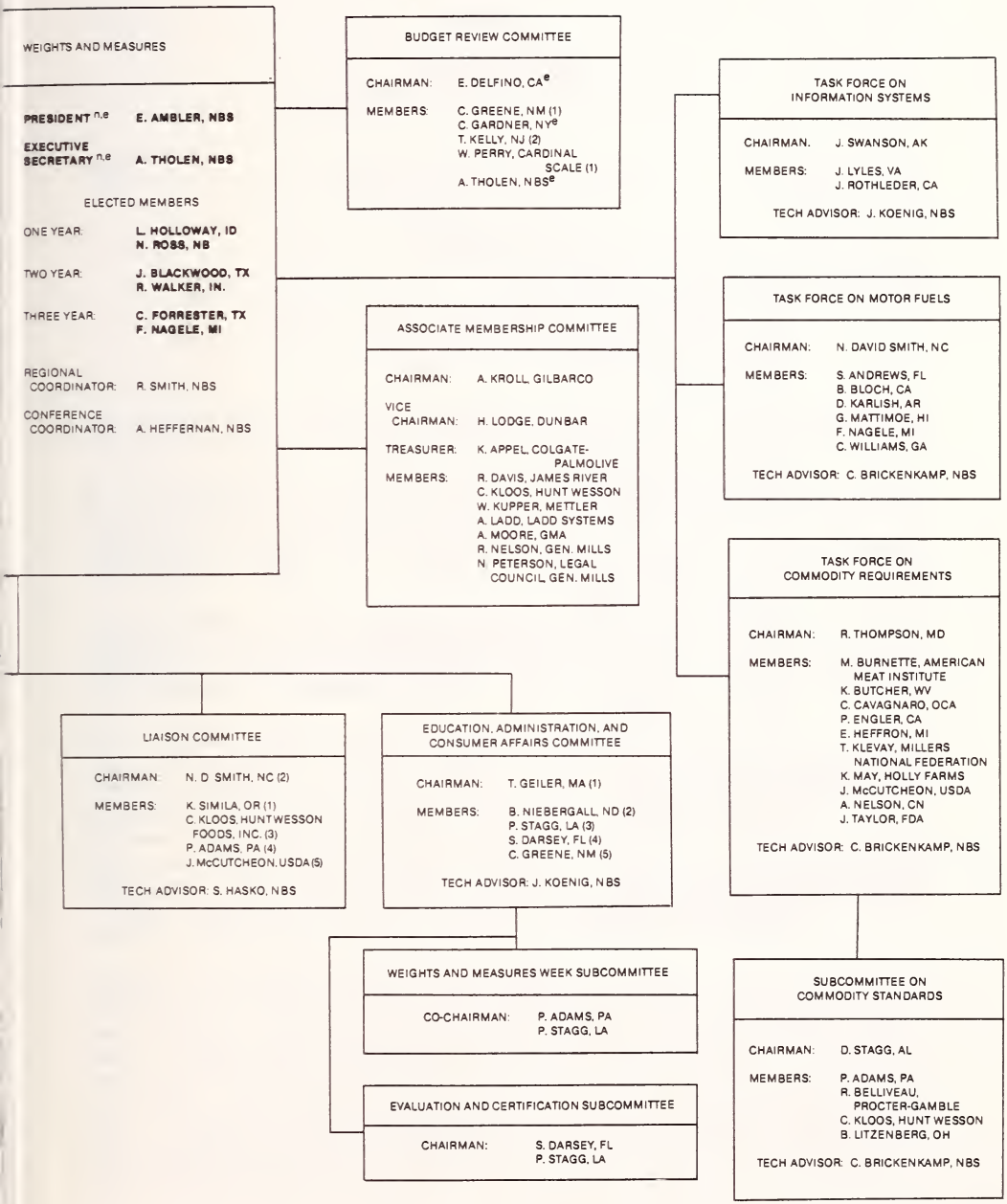
WEIGHTS AND MEASURES



GENERAL SESSION

AGENDA

EZIO DELFINO
Conference Chairman, Presiding

CONSUMER PROTECTION

Virginia H. Knauer

Special Advisor to the President for Consumer Affairs
and
Director, U.S. Office of Consumer Affairs

Dr. Ambler, Mr. Delfino, Mr. Tholen, and ladies and gentlemen of the National Conference on Weights and Measures.

It is a pleasure for me to welcome you to Washington for your 70th National Conference. All 70 have been held, I understand, under the sponsorship of the National Bureau of Standards since the first National Conference in 1905.

Eighty years. That's a long time for almost any program and the endurance of the relationship is testimonial to the need and value of your cooperative efforts to assure fairness in our nationwide system of weights and measures. It is a vital need.

Now I cannot claim that my office has worked with NBS for 80 years, but I do remember my first personal association with NBS's fine work when, in 1970, as President Nixon's appointee as Special Assistant for Consumer Affairs, my office worked very closely with NBS on the National Metric Study Conference on Consumer Affairs. Since that time, some 15 years ago, we have worked increasingly together, and in particular, with your National Conference on Weights and Measures through membership on your Liaison Committee and other specialized advisory groups.

Through all of those years we have sought the common goal of improving the interests of our economy and its consumers through improved weights and measures. We share that goal of "serving consumers better," and I want to thank your Conference through both your President, Dr. Ambler, and your Chairman, Mr. Delfino, for the many years of cooperation with our Office. You have been, in spirit and in deed, always ready to listen and to consider our recommendations. I sincerely hope this opportunity for cooperative effort will continue and I pledge the continued cooperation of my office with you.

Over my years of service to three Presidents, I have been very supportive of initiatives and programs of the National Conference and other standards and enforcement organizations. This work assures the fairness and equity that not only protects consumers, but, just as important, maintains the credibility and viability of the American marketplace. We worked diligently, for example, to assure that some recognition of the need and merit of such efforts was included in the final version of the recent United Nations Guidelines on Consumer Protection.

We must be alert, however, to assure that undertakings in the name of uniform standards or codes are justified, rational, and beneficial--whether undertaken by voluntary groups or government regulatory agencies. A basic philosophy of President Reagan's and a recurrent theme of his Administration, is reliance upon competitive market forces to stimulate our economy to provide consumer choice and reflect consumer preferences to the maximum extent consonant with consumer health and safety and prevention of consumer deception. Let me be clear: where there is demonstrable need and where standardization and uniformity will serve consumers and the market better than uncontrolled innovation we must not be timid. But where the need has not been shown or where it appears that standardization and uniformity may only serve to decrease consumer choice, or limit product innovation, thereby stifling competition, we must show restraint. Standardization for its own sake does not benefit consumers or our economy.

We all remember the days of relative uniformity in the financial services and transportation industries. While the old days of uniformity may have been satisfying to regulators and some of these industries, few could claim that consumers benefited more than they do from the intense competition of today. Such vigorous competition characterizes the modern food industry, despite its being, as it should be, regulated to assure consumer safety. As a result, the American food supply is the world's most varied and we spend less of our disposable income for food than the citizens of any other industrialized nation.

I know that you have a full busy agenda for this meeting with a number of administrative as well as some very significant regulatory issues that demand your consideration. One item where our interests seem to converge is the proposal under consideration to add the relatively new category of spreads to the uniform code specifying package sizes for butter and margarine. While this may not be the most pressing issue before this group, it represents a challenge to our commitment to reliance on competitive market forces, especially in the food industry, in a highly symbolic way.

As many of you who have followed the activities of my office through the years know, I have focused considerable attention and resources on issues similar to this one, issues where consumer choice could resolve the problem, or if not, regulatory action could follow when it becomes manifestly necessary. In this instance, I and others in the Administration are concerned that the vitality and viability of this and other new products in the very competitive and market-sensitive food retailing system

not be stifled by anticipatory action that may preclude us from ever knowing whether it was warranted or not, and may chill the enthusiasm of other innovators. Consumers may reject this product or its packaging, or it may lead the way for marketing innovations in other products. A year or two of experience may show that action is unneeded, or at least determine the type of action needed.

Now, since we seek in many ways the serving of consumers, I would like to take my clue from your theme "Communication - Key to Progress" and share with you some of the work and present concerns of my office.

I have a two-fold communications responsibility--to report to the President and the Executive Branch the priority concerns of consumers, and to inform consumers what actions the President and the Executive Branch are doing to meet these concerns. In my capacity as Director of the United States Office of Consumer Affairs, I also develop my own programs to assist consumers in major areas.

In the last decade or two, the marketplace has evolved substantially, keeping pace with changes in demographics, increased competition producing new products and services, and developing technology in our shrinking world. Consumers are faced with problems and choices that didn't exist or affected very few people not many years ago. Allow me to cite a few examples on which my office is currently working.

One issue we deal with is deregulation, which has led to a greater competition in transportation, banking, and the communication industries. Because of the rapid changes in financial services, my office co-sponsored two national conferences in the past year on deregulation of financial services to stimulate dialogue between consumers and the banking community on critical issues and problems. The response from both sectors has been positive--moving from identification of problems to workable solutions. Through public and private partnerships, materials and special programs are being developed to seek consumer comment and to keep consumers informed of the changes in the financial services industry and of the impact on consumers.

Another major effort has been to inform and educate consumers on the serious issue of consumer product counterfeiting. In just four years counterfeit goods have increased from $4 billion to $19.5 billion dollars at the retail level, according to the U.S. Customs Service. We recently co-sponsored, with the Council of Better Business Bureaus, a conference on the dangers of counterfeit products to our health and pocketbooks, and to highlight the new technologies and other developments to thwart counterfeiters. It is possible that you will come across counterfeit goods in your work.

Elderly and handicapped consumers are another area of concern. With the National Energy and Aging Consortium, which we helped establish, we are promoting national awareness on the special dangers of hypothermia and heat stress for the elderly. In this connection we have worked very closely with the Food and Drug Administration and the American Society for Testing and Materials to develop standards for low reading

thermometers to detect hypothermia - which causes over 25,000 deaths each year. We also are working with commodity futures organizations to warn older consumers of the fly-by-night "boiler room operators" who cheat older Americans of millions of dollars in phony commodities schemes.

And, we are increasing our attention to international issues, especially international trade. Competitive free trade provides consumers with wider choices for products at competitively lower prices. In the United States, Japan, and many other nations, there is now a protectionist sentiment that, if successful, could have a major adverse impact on free trade policies and, ultimately on consumers.

Narrow-interest protectionism is a game no one wins and everyone loses. It affects each of us by reducing competition in the marketplace and reducing choice while increasing prices. It is imperative for consumers to understand the impact that protectionist issues would have on their lives.

In May, our interest in protectionism and related issues took me to Japan at the invitation of the Minister of the Economic Planning Agency (EPA) to address the Japan Consumer Day Symposium in Tokyo and a later conference of Japanese and American consumer educators in Kyoto. Their consumer concerns, not so surprisingly, are similar to ours and they are looking to the United States for models of successful programs for consumers, especially in consumer education--which happens to be one of the top priorities of my office.

All the issues I have mentioned help illustrate the urgent need for continuing consumer education at all levels through a variety of approaches and throughout one's lifetime.

Consumers need an adequate knowledge base for mastering—or even coping with—the marketplace. We, as consumers, need to understand our economic system and know how to make intelligent choices in a complex marketplace, how to protect ourselves from fraudulent schemes and how to participate as citizens in the national and international policy debates that impact on our daily lives. These needs concern me greatly and it is the reason why I have established within my office a Division of Consumer Education to provide national leadership for stimulating new and effective consumer and economic education initiatives through the active support of both the public and private sectors.

We encourage and work cooperatively with leaders in government, educational institutions, business, voluntary groups, and with individual citizens. And these partnerships are working, especially as the corporate sector increasingly recognizes that consumer education is "good business."

And, now, I would like to enlist you in this expanded consumer education effort. As weights and measures officials, you daily work in the front lines on behalf of our marketplace and its consumers. You have a unique position and role to communicate to consumers an understanding of how--in the area of weights and measures—consumers and the businesses serving them, can make intelligent choices and trade offs in the

marketplace, can spot honesty and dishonesty, and can be fully participating citizens in local, national, and international policy debates affecting their lives.

I know and applaud your effort to sponsor a National Weights and Measures Week which my friend and colleague, Peggy Adams, Director of the Bucks County Pennsylvania Consumer Bureau, is spearheading for you. These special "week" promotions can be very effective educational tools, and, we know this is true from our own annual promotion of National Consumers Week proclaimed annually since 1982 by President Reagan. I hope you all get behind these opportunities to get your message to the public, to legislators, and to consumers.

I know too of the dedicated work going on in your standing committees such as the very complete set of training modules being developed by your Education Committee. These will ultimately be very helpful in providing assurances of fairness in an increasingly technical weights and measures environment. Happily, I note, one of these modules will deal with consumer complaint handling--a subject of great interest to me and my office. We have learned, both through research we sponsored and the hundreds of contacts we have had with forward-thinking businesses who have installed effective complaint handling systems, these systems pay off. They pay off by identifying and correcting causes of consumer complaints at the source, they pay off in opportunities to inform and educate consumers as to effective procedures to follow in making the marketplace respond to their needs, and they pay off in providing vital feedback to business as to consumer perceptions, problems, and needs.

Because of our belief in the effectiveness of complaint handling systems, my office sponsored a presentation, as some of you may remember, by one of the nation's leading experts on the subject at the annual meeting of the Southern Weights and Measures Association in Nashville during October 1983. This was followed, at your invitation, by a similar presentation, by the same expert, at your annual conference last year in Boston.

You may detect, I am convinced, the value of installing and constantly improving such systems. I admit it--and hope you share that conviction with me. You may know that we are conducting an update of our study of 10 years ago, Consumer Complaint Handling in America. The update will give us a picture of how the changes in technology and in our evolving marketplace have influenced complaint handling by Federal, State, and local government, business and voluntary groups. I know it will be of interest to you and may have bearing on your own operations. The final report should be available later this year and we will certainly share it with you.

Well, I don't want to overstay my welcome. There are fine and important presentations yet to come which you must hear.

I am delighted to have had this opportunity to welcome you, to congratulate and encourage you in the very important work that you do, and to encourage your support of educational efforts to help consumers

help themselves. I understand your chairman-elect, Mr. Mattimoe, has indicated he plans to emphasize "outreach" in his coming term. I heartily endorse that good idea and urge you to reach out to consumers, don't hide your light under a bushel, let them know you are there to serve and that you can serve them.

All of us will be the better for it. Well informed consumers are better consumers, better customers, and better citizens.

My best wishes for your continued efforts and for the success of your Conference.

It has been a pleasure to be with you.

PAYOFF AT THE GRASSROOTS

Dr. Ernest Ambler
Director, National Bureau of Standards

I am very pleased to be with you at another, namely the 70th, Annual Meeting of this Conference. As your President, I looked forward to meeting with you and reviewing the significant achievements of the past year. This is the fourth Annual Meeting in succession that I have been able to attend. We have been able to share in the satisfaction of reviewing solid results of our joint investment. Each year I also recommend specific actions of the membership at the meeting, especially recommendations of your committees that I endorse.

I want to talk less about recommended actions this week, and more about actions that you need to take when you return to your States and localities.

Payoff from your efforts to date can occur only if grassroots weights and measures officials understand what we have accomplished and apply those accomplishments in their everyday activities.

Payoff at the Grassroots requires:

that every State laboratory be certified and that it provide a full range of services to its weights and measures program and to its local industry;

that every State adopt and apply the latest changes in the uniform regulations, Handbook 44, and Handbook 133; and,

that every State inspector be fully qualified based on the standards adopted by this Conference.

The accomplishments we have made together in the past have been impressive. You should be proud of your accomplishments. You should be proud of your leadership who were inspired to tackle tough issues, many of which had been around for decades.

In making my comments, I want to reflect on the history of your endeavors.

The first subject is checking packaged goods.

The year is 1914. The headline in the newspaper reads, "Henry Ford institutes the assembly line method of making cars."

In the same year, 1914, at the 9th Annual Meeting of this Conference, one of your predecessors said, "We have to study the question of shrinkages, the question of variations due to moisture changes during shipment, to subsequent storage, to sifting, and what not".

Today, 1985, you have a new Task Force on Commodity Requirements with members from State government, industry and Federal agencies working on this problem. I believe that they are succeeding in resolving this problem which has been on the record at least for 70 years.

The 2nd edition of NBS Handbook 133 was published in October 1984. It incorporated changes and modifications to the original Handbook requested by the industry through the Industry Committee of Package and Labeling and by State officials.

I note that your Subcommittee on Commodity Standards, the Task Force on Commodity Requirements, and the Executive Committee have gone on record for adoption. I also understand that all four Regional Associations have voted for adoption. It is now the appropriate time for this Conference to assume a formal position on package checking by adoption of Handbook 133.

The NBS position is that the methods contained in Handbook 133 are statistically correct and should be recognized as national standards.

The second subject I want to review is the status of the **National Type Evaluation Program.**

The year is 1927. The headlines are large and announce, "Lindberg flies the Atlantic solo in the Spirit of St. Louis."

That same year, 1927, at the 20th Annual Meeting of this Conference, a delegate from Pennsylvania declared, "In view of the fact that the subject of type approval as regards commercial weighing and measuring devices is becoming an increasingly important one in this country, it seems appropriate that the matter should be discussed before this body."

More than fifty years later, the question of type approval was still around. But, together, we tackled it. We undertook the design and development of the National Type Evaluation Program because of the great potential to bring economies and advances to both regulatory programs and device manufacturing, sales, and service companies. We recognized the need for a single source of testing procedures, and the need for establishing a nationwide system of type evaluation in which a manufacturer could gain approval to market a new device in any State based on a single evaluation.

We have progressed through the planning and development stages. The NCWM and the NBS have taken most of the actions required under the development plan. Check lists and test procedures have been put together and adopted. The NTEP administrative policy and procedures have been published, including the printing and use of the new Certificate of Conformance. A uniform regulation for NTEP has been drawn up, adopted by the Conference, and published in NBS Handbook 130. A logo has been developed and guidelines written for its use. The NTEP began operating officially last October. So far, over 60 devices have received Certificates of Conformance under the program.

Yes, progress has been impressive. However, there remains one serious concern. A concern about action required before the industry and the States can profit from the investment made to develop the NTEP. California, Ohio, and North Carolina have adopted the uniform regulation. A few States are in the process of its adoption. I am concerned about the lack of action by several States that require type approval at the State level.

Regulations of a State might already provide the Director of Weights and Measures with the authority to accept the NTEP Certificate of Conformance without adopting the uniform regulation. I urge the Directors in such States, that is those that do not need to adopt the uniform regulation, to issue an official notice of that fact and of their intent to accept the NTEP Certificate of Conformance in lieu of an evaluation in that State. The potential savings of tax dollars and industry budgets for evaluation of devices will not be realized until these steps are taken at the State level. In those States that will require legislative action to participate in NTEP, I urge you to take that action soon.

If you have difficulties and I can help in any way, please call on me. I am willing to contact State officials at any level to persuade them that this adoption of the uniform regulation is definitely in the national interest and, I believe, also in the interest of each individual State.

My third subject is the **National Training Program**

The year is 1941. The radios brought the startling news, "Japan bombs Pearl Harbor and other Pacific territories."

Six months earlier, in June of 1941, the Chairman of the Conference Committee on Weights and Measures Education reported, "we suggested a course of study for the individual inspector, and a general school of instruction for all weights and measures officials in the jurisdiction."

Many efforts have been made over the years to encourage training of officials. We concluded four years ago that no permanent progress could be made unless we developed formal written manuals to serve as the textbooks for training. Your leadership asked for a grant from the National Bureau of Standards to begin work on writing these "textbooks." These training publications will contain the basis for training inspectors in the latest technology and are designed to be updated as the technology or legal requirements change.

This year, several training modules will be published. Complementing the manuals is a State certification plan. Completion of training in any given subject and the successful passing of a final examination will be the basis for certification of the inspector in that particular function.

I urge the States to plan on the use of the Conference developed manuals as the required material for certification of your inspectors. I further urge the States to budget for the purchase of the manuals as they are packaged by the Conference.

The Conference needs to explore means for financing the completion of the development of all of the planned modules as well as for the updating of the modules after they are published. The NBS grant was for research into the feasibility of the program by the development and testing of a number of modules. I believe that the feasibility has been proven. Now, the NBS support should shift to other research related activities such as the potential for use of computers and networking in the administration of weights and measures programs as described at last year's Annual Meeting by Stan Warshaw.

The State Laboratory Program is my fourth subject.

The year is 1961. John F. Kennedy is inaugurated President of the United States.

At the 46th Annual Meeting in 1961, the Executive Secretary of the Conference reported on the progress being made on the design of new standards and instruments to outfit the State laboratories. He stated that, "these standards and instruments will be such that, if adequate space and properly trained personnel are provided, the State weights and measures laboratories can become, in reality, the measurement center for the State - for business, industry, education, and technology". That program was a success and the 50th State laboratory outfitted with these new State standards and instruments was dedicated in 1979.

After several years of intensive work, this year, 1985, has been a landmark year for the State Laboratory program. The details of the NBS -State relationship has been documented formally for the first time. The criteria and procedures for certification of the qualification of State weights and measures laboratories has been developed, documented, and applied. NBS Handbook 143, "State Weights and Measures Laboratories, Program Handbook" was published in February 1985. In addition, a second part was added to the Handbook that provides additional criteria and procedures to be used in authorizing previously certified laboratories to function as testing laboratories in the National Type Evaluation Program.

A second document, NBS Special Publication 686, "State Weights and Measures Laboratories, Program Description and Directory" was printed in January, 1985. This publication describes the State Laboratory Program, and contains a description of the services provided by the State laboratories, and the status of certification by the NBS.

The acceptance and application of the criteria and procedures of these publications is an excellent example of the actions needed at the State level to achieve the pay-offs envisioned.

Pay-offs from these efforts are accruing in terms of added facilities and staff. In several States, new laboratories are in the planning stage. All States are members of one of five regional measurement management programs, involved in professional activities including training and round robin experiments. Training of State metrologists has been enriched with the development of class room notes, which will appear as "Metrologists Handbooks" during the next year.

However, there are still three State laboratories that are not certified. Additionally, many other State laboratories have very limited programs. In all of these cases, we at NBS intend to persist in encouraging and assisting the States in obtaining the facilities or skills needed to provide the services every State requires to support commerce.

In conclusion, The National Bureau of Standards and the National Conference on Weights and Measures are responding to the needs of commerce. The results to date include updating the key NBS Handbooks, formalization of State laboratory programs, establishment of the Type Evaluation Program and the Training Program. The preparation and publication of this body of standards, criteria, and procedures is impressive, but the payoff on the investment of monies and time spent by many has only begun.

The standards exist; the policies exist; the Uniform Regulations exist; the test criteria and procedures exist; the training materials are well along; the resources exist.

I am very happy about the achievements we are making together. And the individual who is largely responsible for things happening at NBS and in the National Conference is Al Tholen. His energy and leadership over the past seven years have been truly remarkable. Last year, your Chairman, Sam Hindsman made a presentation to Al recognizing his "outstanding service to the National Conference on Weights and Measures."

I am, therefore, most pleased today to announce that Al has been selected to receive the 1985 Allen Astin Award. This prestigious award recognizes not only Al's contributions, but in the larger sense, the accomplishments of his staff and the achievements of you in the Conference also. And this broader recognition is very fitting. The award, named in honor of our distinguished past Director Allen Astin, is for outstanding Bureau achievement in the accomplishment of measurement services. In Al's case, it recognizes his unique contributions to the promotion of a uniform weights and measures system.

Allen Astin had a long and deep interest in weights and measures and this Conference; he had pride in being your President. Association of the award with the National Conference is especially appropriate. I want to congratulate Al, his staff, and the members of the National Conference on this very special award.

Let us all apply the results of our hard work at the Annual Meeting to your programs at home. The potential for significant payoffs at the grassroots is available; let's go for it.

COMMUNICATION - KEY TO PROGRESS

Ezio Delfino,
Chairman, National Conference on Weights and Measures

Mr. President, honored guests, weights and measures officials, associate members:

This year has been a wonderful experience for me serving as your Chairman. But, before I get into commenting on the year, I want to report on the predicted weather conditions in San Diego today. The high will be about 70 °F; the low will be 55 to 60 °F. The relative humidity will be 20 to 30 percent. I just thought that you might like to know that and compare that prediction with the weather here.

Concerning my talk, I find that I do not work from a prepared text as well as I do from notes. Therefore, I will be talking from notes today and hereby give the Executive Secretary full and sweeping editorial privileges to get it into shape for the Conference proceedings.

This past year as your Chairman has been a unique experience for me. I attended the Western Meeting in Seattle, the Northeastern Meeting on Long Island, Northwest Meeting in Minneapolis, and the Southern Meeting in Huntsville, Alabama. I also had the opportunity to attend a meeting of the International Organization of Legal Metrology in Helsinki with Al Tholen and his wife.

In terms of the United States, I realize again how diverse this country is. The local economies vary from heavy industry to heavy farming. Local concerns vary from one part of the country to another. Local customs and manners of speaking are different and sometimes amusing. When I was at the Northeastern meeting in Long Island, Don Stagg followed me on the program to talk about Handbook 133. When he finished his talk, he said, "Y'all come see us now." Later in the day, he commented that the folks in the northeast "sure talk funny."

For all the diversity from coast to coast and the northern to the southern borders, we are still surprisingly uniform in the way we conduct ourselves in the marketplace. California regulates approximately 280 billion dollars of commerce annually. Our national economy, which is regulated by you folks representing the States and industry, is many times as large. To say that our uniformity is surprising is not intended to discount the fact that we do have problems to deal with. There are currently hot issues such as ice cream bars, margarine-type spreads, and dealing with products gaining or losing moisture.

But we've dealt with problems like this before. Those of us who have been around for a few years remember the discussion on bailer's twine and polyethylene sheeting. And who of us can forget the excitement of the discussions on wallpaper between the paper hangers and the wallpaper manufacturers.

Even when we've resolved our current issues, there will be other problems that we will have to deal with. Let us remember that we have been successful.

Can you imagine the USDA, the Food and Drug Adminstration, consumers, industry, and weights and measures officials all working together? They are on the net weight issue. The special task force under Dick Thompson is tackling some very interesting problems and I expect that they will be able to resolve much of this issue.

This Conference is the perfect forum for the discussion of diverse issues. It is a model that could be copied by other groups dealing with similar situations. One of the beauties of this Conference is its ability to maintain a steady constructive course in terms of the participants over the years. We are losing some real giants of weights and measures individuals who have worked with this Conference for many many years. I understand this might be the last Conference as active members for Syd Andrews, Stan Darsey, Lyman Holloway, to name a few. In not too many years, the Conference will be losing as active members individuals like Jimmy Lyles and Sam Hindsman. But, as I look around this room I know that the Conference will continue to be in good hands. We have new blood coming on strong such as the Staggs (Don and Phil), Dave Smith, and Treasurer Charlie Gardner. You young whippersnappers have a responsibility to carry on the finest tradition that has been established by your predecessors. I have no doubt that this fine tradition will continue on in the future.

After reflecting on the fine tradition of this Conference, we must remember that after all is said and done, we must go home and implement the various actions taken here at the annual meeting. I want to reinforce the comments made by others that the real payoff of the work done by you here will accrue only if we take the results of this Conference to every weights and measures official in the country.

The world is changing rapidly. Society is changing on a daily basis. We have to be disciplined to keep up with these changes. What would be the reaction of our great-grandparents if they were to be suddenly thrust into the world today? It would be pretty tough going for them. The advantage we have is that we are dealing with it on a gradual basis, year by year.

Finally, I wish to congratulate Al Tholen upon being selected to receive the 1985 Allen V. Astin Measurement Science Award. Over the years, Al and his staff have proved to be invaluable in contributing to the Conference's success. Congratulations, Al.

In closing, I want to reiterate that we must continue to cope with an ever faster changing world. We must continue to talk to each other, to communicate. We must continue to work towards uniformity. If we do that, we will not fail. Thank You.

CERTIFICATES OF APPRECIATION

The Conference Chairman presented Certificates of Appreciation to members of the Standing Committees who had completed their tenure on each committee, and two special appointees who were retiring.

Darrell A. Guensler
Committee on Specifications and Tolerances

Edward P. Skluzacek
Committee on Laws and Regulations

Kendrick J. Simila
Committee on Liaison

Thomas F. Geiler
Committee on Education, Administration, and Consumer Affairs

Lyman D. Holloway
Executive Committee

Norman M. Ross
Executive Committee

Stan J. Darsey
Committee on Education, Administration, and Consumer Affairs, retiring

Sydney D. Andrews
Parliamentarian, retiring.

HONOR AWARDS PRESENTATIONS

Dr. Ernest Ambler, President of the Conference, presented Honor Awards to members of the Conference who, by attending the 70th Annual Meeting this year, reached one of the attendance categories for which recognition is made - attendance at 10, 15, 20, 25, and 30 years.

10 YEARS

John J. Bartfai	State of New York
A. R. Daniels	NCR Corporation
Francis W. Daniels	Wayne County, Indiana
Ezio F. Delfino	State of California
Darrell A. Guensler	State of California
Stephen A. Malone	State of Nebraska
Allan M. Nelson	State of Connecticut
Claude R. Parent	Gilbarco, Inc.
William C. Sullivan	City of Seattle, Washington
Charles H. Greene	State of New Mexico
Charles L. VanInwagen	Shell Oil Company

15 YEARS

Thomas E. Kirby	Retired, State of Georgia
Merrill S. Thompson	Chadwell & Kayser, Ltd.
Charles J. Denny	William M. Wilson's Sons, Inc.

20 YEARS

Trafford F. Brink	State of Vermont
Eugene Keeley	State of Delaware
Richard L. Thompson	State of Maryland
Thomas M. Stabler	Toledo Scale

25 YEARS

James F. Lyles	State of Virginia

30 YEARS

William A. Scheurer	Retired

REPORT OF THE EXECUTIVE COMMITTEE

Ezio F. Delfino, Chairman
Assistant Director, California Division of Measurement Standards
State of California

REFERENCE KEY

100 INTRODUCTION

The Executive Committee submitted its Report to the 70th Annual Meeting of the National Conference on Weights and Measures (NCWM). The report consisted of the Interim Report as offered in the Conference Announcement and as amended by Addendum Sheets developed during the Annual Meeting.

After its component items were adopted, the Report was adopted in its entirety by hand vote of the membership.

The Report contains the recommendations of the Committee formed on the basis of written and oral comments received during the year.

The following number sequence for the Reference Key Items is used to group items into categories.

101	CONSTITUTION AND POLICY
102	MEMBERSHIP
103	ORGANIZATION AND ADMINISTRATION
104	PROGRAM
105	NATIONAL TYPE EVALUATION PROGRAM

REFERENCE KEY ITEMS CONTAINED IN THE REPORT

Table A (next page) identifies all of the items contained in the report. The Reference Key numbers and titles of voting items are identified in **bold face print.** All others listed are Information Items.

ORDER OF PRESENTATION

The Committee presented the voting items individually. After discussion and voting on those items, the Informational Items were described and then the Committee Report in its entirety was voted on.

Table A
REFERENCE KEY ITEMS

Reference Key No.	Title of Item
	CONSTITUTION AND BYLAWS
101-1	Constitution and Bylaws, General
101-2	NCWM Logo
101-3	Evaluation of New Procedure
101-4	Committee Structure
101-5	Policy and Guidelines
101-6	Scheduling of Annual and Interim Meetings
102-1	Recognition of Advisory Members
102-2	Role of Associate Members
102-3	Membership, Promotion
103-1	Elections, Appointments, Resignations
103-2	Finance, Financial Report
103-3	Budget Development
103-4	Publications and Forms
103-5	Weights and Measures Directory
103-6	Associate Member Directory
103-7	Newsletter, W&M Today
104-1	Planning for Annual Meetings
104-2	Regional Associations, Coordination with NCWM
104-3	Regional Presidents' Meeting
104-4	Training, Administration, and Consumer Affairs
104-5	Task Force on Commodity Requirements
104-6	Subcommittee on Commodity Standards
104-7	Task Force on Motor Fuels
104-8	Task Force on Information Systems
104-9	Customs
105-1	Policy and Procedures
105-2	NTEP Logo
105-3	Index of Device Evaluations
105-4	Uniform Regulation for NTEP
105-5	Laboratory Authorization
105-6	NBS Role in NTEP
105-7	Relationships of NTEP, HB 44, and W & M Law
105-8	NTEP Brochure
105-9	Load Cell Intercomparison

Individual Voting Items

Formal action (vote) of the NCWM was requested on the two following items:

104-6 Subcommittee on Commodity Standards

This Item was adopted (State Representatives 43 Yea; 0 Nay: Delegates 71 Yea; 0 Nay).

105-2 NTEP Logo

This Item was adopted (State Representatives 28 Yea; 0 Nay: Delegates 75 Yea; 0 Nay).

* * * * * *

DETAILS OF ALL ITEMS FOLLOW IN NUMERICAL ORDER

REFERENCE KEY

CONSTITUTION AND BYLAWS

101-1 CONSTITUTION AND BYLAWS, GENERAL

The Constitution and Bylaws were adopted at the 69th Annual Meeting. They were printed as NCWM Publication #1 and distributed to the membership in December, 1984. Several items were discussed to correct or improve the document, none of which required formal action by the membership at the Annual Meeting.

Credentials Committee.

The Credentials Committee is referenced as an Annual Committee (page 10) and as a Standing Committee (page 12). The page 10 entry is an error and will be deleted in future printings.

Standing Committees - Membership.

Article V, Section 2A, first paragraph (page 11) as adopted by the membership at the 69th Annual Meeting was changed to read:

"- - - be appointed from the active, the advisory, or the associate membership) on - - -." The words "the advisory" will be added in future printings.

Nominating Committee.

The Constitution and Bylaws states (Page 4) that "The Chairman shall appoint a Nominating Committee consisting of the most recent Past Chairman as Committee Chairman and six (6) active members". The custom in the past has been to appoint all past Chairmen to the Nominating Committee. All members of the current Nominating Committee are past Chairmen (7).

The possibility that more than six past chairmen may be available for appointment to the Nominating Committee was discussed. The Executive Committee voted to retain the current wording in the Constitution and Bylaws.

101-2 NCWM LOGO

A proposal to change the logo was discussed at the Interim Meeting in January, 1984. The proposal was tabled at the Annual Meeting after the Committee realized that the current logo is officially recognized by the U.S. Department of Commerce. Inventory of the logo is essentially depleted; therefore, the Executive Secretary was authorized to proceed with the reproduction of the current, DoC approved logo with some minor modifications.

A related item on the Agenda of the Executive Committee for discussion was the use of a logo by participants in the National Type Evaluation Program (see Reference Key 105-2).

101-3 EVALUATION OF NEW PROCEDURE

Chairman Delfino was the first Chairman who served as Chairman-Elect prior to assuming his duties as Chairman.

Having served as Chairman-Elect for a year, he was prepared to announce most of his appointments at the Annual Meeting. The Chairman had formulated plans regarding issues that he wanted the Conference to address. At the top of his agenda was the issue of net weight. He had, therefore, made plans to establish a new Task Force of Commodity Requirements and a Subcommittee on Commodity Standards.

This new procedure resulted in the added benefits of recognizing the appointees at a general session of the Conference, and establishing the full complement of Committees and Task Forces to start their planning at the beginning of the Conference work year.

101-4 COMMITTEE STRUCTURE

Over the years, proposals have been made to improve the capabilities of the Conference to conduct its business. Notable changes have been made in voting procedures, committee operation, and restructuring of the Executive Committee.

These discussions continued based on recent suggestions made for eliminating some of the overlap of committee activities. Activities of the standing committees were reviewed to determine the extent of overlap and possible remedies. The Committee on Laws and Regulations and the Committee on Specifications and Tolerances continue to have heavy schedules and large agendas. The Committee on Education, Administration, and Consumer Affairs is heavily taxed to maintain its schedule in the development of the training program. The Committee on Liaison has had a lighter schedule recently. It was suggested that the work of the Conference could be distributed more evenly to relieve those committees with heavy agendas by transferring selected assignments from them to the Liaison Committee.

The Committee on Liaison met with the Executive Committee to present its views on any reorganization that might impact its role, and discuss possible additional assignments. The Conference adopted the role and function of the Liaison Committee at the 66th Annual Meeting (NBS SP 629, Page 202). These changes, recommended by the Committee on Liaison, broadened its role and emphasized the importance of its functions if proper assignments were made.

After this joint meeting and the review of the previous action by the Conference, the Executive Committee concluded that:

1. No changes should be made in the number and composition of the standing committees at this time,

2. The oversight of the Task Force on Motor Fuels should be assigned to the Committee on Liaison,

3. Selected assignments related to the planning for the observation of the 150th Anniversary of the establishment of the Office of Weights and Measures should be made to the Committee on Liaison, and

4. The Executive Secretary should establish a procedure for review and assignment of items to the various committees.

Chairman Delfino assigned the Task Force on Motor Fuels and the NCWM activities associated with the planning for the 150th Anniversary of the NBS' Office of Weights and Measures to the Committee on Liaison.

The Executive Secretary has been requested to prepare a review of each future proposed establishment of new or reassignment of existing Task Forces, sub-committees, or special committees for the use of the Conference Chairman regarding the appropriateness of the proposal.

101-5 POLICY AND GUIDELINES

A new manual, "Administrative Policies and Guidelines", has been assembled as a draft of NCWM Publication 3. Included in the manual is material adopted by the NCWM:

1. since 1970;

2. appearing as part of a committee report related to but not made a part of Handbooks 44 and 130; and

3. setting or expressing policy, or interpretive in nature.

Those policies and guidelines falling under the purview of the Executive Committee have been reviewed by the Committee members by use of a mail ballot. Comments will be addressed by the Committee at the Interim meeting in January 1986.

Those policies and guidelines falling under the purview of the other NCWM Committees will be on the agenda of the appropriate committees at the Interim Meeting in January 1986.

NCWM Publication #3, "Administrative Policy and Guidelines" will be printed in the Spring of 1986.

101-6 SCHEDULING OF ANNUAL AND INTERIM MEETINGS

The Executive Committee discussed the pros and cons of holding the Interim and Annual Meetings at times other than January and July respectively. The weather in Washington, D.C. in January has been a concern to some members primarily because of travel complications.

Changing the time for holding the Interim Meetings can not be done without a similar rescheduling of the Annual Meeting; six months is necessary for developing Committee reports so that the Announcement Book can be published and distributed at least two months before the Annual Meeting. That minimum of two months seems to be required for the interested parties to develop positions of their jurisdictions or organizations for presentation to the Committees at the Annual Meeting. The Annual Meeting can not be held much later in the Calendar year than July without jeopardizing the objective of publishing the latest version of NBS Handbooks 44 and 130 for the State jurisdictions to have them in time for processing to become effective on January 1 of the new year.

MEMBERSHIP

102-1 RECOGNITION OF ADVISORY MEMBERS

Activities of the NCWM Committees involve representatives of the Federal Agencies having regulatory responsibilities. Their representatives are assisting in the seeking of consensus on issues that involve their responsibilities. The question raised is "are the Federal Agencies with regulatory responsibilities adequately recognized in the NCWM?"

This question was discussed in detail and included a review of the involvement of the Advisory Members in the various activities of the Conference. In recent years, opportunities for that involvement have been greatly expanded through appointments to the various technical committees and task forces.

This year, Mr. John McCutcheon of the U.S. Department of Agriculture is a member of the Committee on Liaison, and Mr. Dennis Mahoney of the U.S.D.A. Federal Grain Inspection Service is a member of the Technical Committee on National Type Evaluation. Mr.McCutcheon, Mr. John Taylor of the U.S. Food and Drug Administration, and Mr. Cavagnaro of the Office of Consumer Affairs in the White House are members of the Task Force on Commodity Requirements.

The Executive Committee is exploring possibilities for adding representation of the Advisory membership on committees that are dealing with subjects related to Federal agency interests. No further action is planned at this time.

102-2 ROLE OF ASSOCIATE MEMBERS

Mr. Art Kroll (Gilbarco), Chairman of the Associate Membership Committee, met with the Executive Committee to discuss the role of that membership in the work of the Conference. Mr. Kroll reported on a survey of the Associate Membership made in November 1984. In summary:

1. a total of 180 questionnaires were sent out;

2. fifty(50) responses were received;

3. over three-fourths of the respondents said that the annual reception was appropriate and beneficial;

4. half felt that the Associate Membership Committee should be listed and treated as a standing committee of the NCWM; and

5. almost two-thirds responded that the Associate Membership could provide a forum for broader industry communication.

The involvement of the Associate Membership was explored by Mr. Kroll and the Executive Committee. It was observed that:

1. nearly 40 Associate Members are members of various committees; and

2. Associate Members make a significant contribution to the progress of the Conference through other organizations, such as the Scale Manufacturers Association (SMA), the Industry Committee on Packaging and Labeling (ICPL), the American Petroleum Institute (API), and the Grocery Manufacturers of America (GMA).

It was concluded that the Associate Membership invested large amounts of time and contributed successfully to much of the advancement of the work of the NCWM through many individual and group activities. It was also concluded that the Associate Membership Committee itself represented such divergent interests that it would be difficult to define a program of involvement that could attract the interest of its membership in general.

The Executive Committee:

1. decided to issue a Directory of Associate Members, alphabetically by Company name;

2. advised Mr. Kroll that, as an Annual Committee of the NCWM, the Associate Membership Committee was entitled to use the Conference letterhead and administrative support for NCWM related activities, and

3. found the survey results very informative and useful in planning for the continued and growing involvement of the Associate Membership in the life of the Conference.

102-3 MEMBERSHIP, PROMOTION

The basic question discussed was "How do we interest others (regulatory officials and industry) in becoming members?".

State and Local Officials

Of the estimated 3000-plus weights and measures officials nationwide, over 2400 are listed in the latest Directory. Of that number, only about 600 are actually members of the NCWM (less that 1 out of 5). The 2400 listed in the Directory have all received the Directory and invitations to become members; very few have joined.

Distribution of Publications

Members receive a copy of all NBS and NCWM publications. The Committee reviewed the rationale of this policy and explored alternatives.

One such alternative is to establish a basic membership fee plus add-ons for selected packages of documents. Other professional organizations operate in this manner, especially if they are made up of members with varying interests.

> Basic Fee. Perhaps a "basic" fee of $15 could be established which would include the Directory, Newsletter, Tech Memos, all meeting announcements, programs, and NCWM proceedings.
>
> State Supplemental Package. In addition to the "basic fee" of $15.00, a State or local official could sign up for a $25 "State Supplemental Package" which would provide a copy of all other publications.
>
> Device Industry Supplemental Package. In addition to the "basic fee" of $15.00, a scale industry member could sign up for a $15 "Weighing Industry Supplemental Package" which would provide all device-related publications but not the commodity-related publications, such as HB 133.

The Executive Committee took no action on this item, but will continue to explore such alternatives.

Promotional Items

Previously, the NCWM sold neckties as a promotional item. The ties were very popular. The Committee explored similar items representative of weights and measures that might appeal to the membership, such as tie tacs, earrings, lapel pins, etc. The Conference Coordinator presented information on the availability and cost of these items.

Actions Taken at the Interim Meeting

The Executive Committee decided to :

1. mail the next issue of the Newsletter to everyone on the NCWM mailing list;

2. send a supply of the NCWM membership brochure (with membership application form) to each State Director for his/her use in promoting membership in the Conference.

3. procure a supply of tie tacs/lapel pins and ties for sale at the 70th Annual Meeting in July 1985, and obtain information on the costs of other items such as belt buckles, scarfs, and license plate holders.

Follow- up by Conference Coordinator at the Annual Meeting

1. The Newsletter was mailed to the entire mailing list.

2. Every State office was sent 50 NCWM Brochures for use in promoting Conference membership.

3. Weights and Measures ties, tie tacs, and lapel pins were purchased for sale.

ORGANIZATION AND ADMINISTRATION

103-1 ELECTIONS, APPOINTMENTS, RESIGNATIONS

The Chairman reported on all appointments made to date. See pages 12 and 13 for the organization chart.

Resignation from Committee on Laws and Regulations

Dr. George Mattimoe, Hawaii, resigned as a member of the Committee on Laws and Regulations subsequent to his election as Chairman-Elect in accordance with the Constitution, Article IV, Section 2: "the Chairman-Elect shall not serve on any standing Committee other than the Executive Committee."

Appointment to Committee on Laws and Regulations

Mr. Allan Nelson, Connecticut was appointed by Chairman Delfino to the Committee on Laws and Regulations to fill the unexpired term of Dr. Mattimoe.

Election of Treasurer

Mr. Charles A. Gardner Jr., Weights and Measures, Suffolk County, was appointed Treasurer by the Executive Committee to succeed Mr. Nelson.

Resignation from the Executive Committee

Mr. James Blackwood, Dallas, Texas, resigned from the Executive Committee because he has been promoted.

Appointment to the Executive Committee

Mr. John Bartfai, New York, was appointed to the Executive Committee to fill the unexpired term of Mr. Blackwood. Mr. Bartfai was attending the Interim Meetings and was therefore able to participate in the activities of the Executive Committee immediately after his appointment.

Sergeants-at-Arms

William Sullivan, Seattle, Washington, and Tom Scott, North Carolina were appointed as Sergeants-at-Arms for the 70th Annual Meeting.

103-2 FINANCE, FINANCIAL REPORT

At the Interim Meeting the Treasurer (Mr. Nelson) reported on the then current financial status of the Conference, describing the receipts and disbursements in relation to the budget, as well as summarizing the investment of monies surplus to operational needs. At the end of December 1984, expenditures were approximately $10,000 over the budget. The primary reasons are:

1. continuing requests by State and local committee members for payment of committee related travel and per diem expenses; and

2. increased number of special task forces and committees including the two new groups dealing with commodity standards.

The Executive Committee reviewed the budget situation and the details surrounding the overexpenditure. It concluded that the need for the committee activities was valid, that the results to date were excellent, and that the committee should continue to operate toward the desired results.

The Treasurer, in his report, noted that the NCWM had adequate reserves for the current year at the present rate of spending. He noted, however, that the reserves would become dangerously low next year; in fact, the NCWM might find itself in a negative cashflow position.

As a result of finding the NCWM operating over its budget, and desiring that the committee work of the Conference continue, the Executive Committee decided to raise the registration fee for the 70th Annual Meeting in July 1985 to $135 (see Reference Key 103-3).

103-3 BUDGET DEVELOPMENT

The Executive Secretary reported on the budgets for the future fiscal years of the Conference. He requested that the Executive Committee establish guidance for the development of out-year budgets because of the need to raise revenues or limit activities. Some actions considered for increasing revenues included:

1. attain increased membership (see Reference Key 102-3);

2. encourage additional State fiscal support of committee participation;

3. establish a registration fee for the Interim Meetings. Cost of these meetings is over $20,000 and increasing annually. A registration fee of $50 for 200 attendees would raise $10,000 covering 50% of the costs;

4. increase registration fee for the Annual Meeting. This Fee has not been increased for several years. An increase from $50 to $100 would produce about $15,000 in additional revenue;

5. establish a two-tier fee system, Active members (State and local officials), and Associate and Advisory Members.

The Executive Committee also considered the alternative of reducing expenditures but concluded that the potential benefits of the committee activities of the Conference justified the increased spending level.

At the Interim Meeting in January 1985, the Executive Committee:

1. voted to increase the Registration Fee for the 70th Annual Meeting from $85.00 to $135.00 (including $35 membership fee); and

2. requested the Executive Secretary to prepare a budget for the year beginning July 1, 1985 and have it printed in the Announcement Book. See Appendix A for Fiscal Year 70 (July 1, 1985 through June 30, 1986) Budget.

The proposed Operating Budget for the fiscal year beginning July 1, 1985, as printed in the Interim Report:

1. establishes separate income (1.5) and disbursement (11) accounts for purchase and sale of promotional items such as ties, tie tacs, and lapel pins;

2. changes budgeted cost of Special Programs to reflect planned adjustments in committee and task force activities; and

3. changes the title of Account 1.3 to "Training Modules" and adds a new Account 12.0 "Training Modules" to maintain records of income and expense relating to the provision of the training modules separately.

The budget printed as Appendix A of this report replaces the budget printed as Appendix B of the Interim Report. Assuming that actual expenditures equal budgeted expenditures, the operating budget will finish the year with an operating surplus of $3,598.

103-4 PUBLICATIONS AND FORMS

Recently, many of the activities of the NCWM have been formalized, including standardization of forms and preparation of publications.

Standardization of Forms

The forms that have been standardized are shown in Table 1.

Table 1 - NCWM Forms

Form No.	Form Title
#1	Cover Sheet for Contract
#2	Amendment/Modification of Contract
#3	Committee Ballot
#4	Policy and Guidelines Format
#5	Purchase Order or Contract

Preparation of NCWM Publications

The family of NCWM publications and status of each are shown in Table 2.

Table 2 - NCWM Publications

Pub. No.	Title of Publication	Status
#1	NCWM Constitution and Bylaws	Published and Distributed
#2	Weights and Measures Directory	Published and Distributed
#3	NCWM Policy and Guidelines	Partially compiled
#4	NTEP Policy and Procedures	Published and Distributed
#5	NTEP Index of Evaluations	Published and Distributed
#6	NTEP Program Information	In Development
#7	Weights and Measures Week Guide	Published and Distributed
#8	Relationships of NTEP, HB44, and W & M Law	Published and Distributed

103-5 WEIGHTS AND MEASURES DIRECTORY

At the Interim Meetings in January 1984, the Membership Subcommittee of the Executive Committee recommended that the State weights and measures offices be requested to send complete and current mailing lists of their staffs for inclusion in the Directory. This recommendation was implemented and the response was excellent.

The Weights and Measures Directory has been updated by including the material sent by the States and now contains 2,497 listings (more than double the listings in the previous edition). It was printed as NCWM Publication #2, and mailed to the membership in December 1984.

The Executive Committee decided to adopt the following changes for the next edition of the Directory:

1. Show a difference between members and non-members as an incentive to promote membership (e.g., members in **BOLD** type, or print "MEMBER" next to the member's name).

2. Include the OWM and key NBS staff near the front of the Directory.

3. List the State Director first in the State listing in Section II of the Directory.

103-6 ASSOCIATE MEMBER DIRECTORY

The Executive Committee decided that there is a need for a directory of Associate Members (see Reference Key 102-2). The Executive Secretary was requested to proceed with the preparation of this directory and to distribute it to the members of the NCWM.

103-7 NEWSLETTER, W & M TODAY

The Membership Subcommittee of the Executive Committee recommended development of a weights and measures newsletter. The OWM established such a newsletter, "W & M Today", with Mrs. Joan Koenig as the Editor. Three issues have been distributed to the NCWM membership (June 1984, November 1984, and June 1985) with enthusiastic acceptance. The Executive Committee encouraged the continuation of this newsletter.

PROGRAM

104-1 PLANNING FOR ANNUAL MEETINGS

71st Annual Meeting, July 20 - 25, 1986

The Executive Secretary reported on the status of planning for the 71st Annual Meeting, to be held at the Marriott Hotel in Albuquerque, New Mexico. The report included a description of the hotel, room rates, travel options, and potential social activities.

The Marriott is the most recent addition to the major hotels in Albuquerque, New Mexico. The hotel has over 400 rooms, two restaurants, and a health club. It is eight miles by complimentary limousine from the airport. Located in the newest section of the city, the hotel is adjacent to a large shopping mall and other attractive facilities including restaurants, movies, and stores. Old town Albuquerque is only a ten-minute drive from the hotel.

Address

2101 Louisiana Boulevard, NE
Albuquerque, New Mexico 87110

Rate

$66 single or double occupancy. Local tax on room rate is 7.625%.

Parking

Parking in the hotel parking lot is free to hotel guests.

Meetings

All needed meeting rooms are provided gratis on the basis of the expected room occupancy by the NCWM membership.

72nd Annual Meeting, July 19 - 24, 1987

The Executive Secretary reported on the preliminary planning for the 72nd Annual Meeting to be held in Little Rock, Arkansas at the Excelsior Hotel contingent on negotiating acceptable room rates and meeting space arrangements.

The hotel is located in downtown Little Rock on the Arkansas River. It is part of a complex including the Statehouse Convention Center. The hotel opened November 1982. It is approximately 15 minutes from the airport, has 462 guest rooms, several in-house restaurants, a group of retail shops off the lobby, and complimentary parking for hotel guests in an attached parking garage.

73rd Annual Meeting, July 17 - 22, 1988

The Executive Secretary reported on his visit with Dr. Edward Heffron to Grand Rapids, Michigan and the Amway Grand Plaza Hotel. He showed a video tape description of the hotel and tourist attractions in and near Grand Rapids. On the basis of his report, the Executive Committee voted to hold the 73rd Annual Meeting in Grand Rapids at the Amway Grand Plaza Hotel contingent on negotiation of acceptable room rates.

The Hotel is a AAA 5-Diamond and Mobile 4-Star facility. It is an outstanding hotel and includes a variety of restaurants, lounges, retail shops, 24 hour room service, tennis and racquet ball courts, swimming pool and jacuzzi, health club, and parking in an attached parking garage. It is across the Grand River via a foot bridge from the Gerald Ford Presidential Museum.

Future Meetings, Candidate Locations

Proposals have been received to host the National Conference Annual Meeting in the following locations: Seattle, Washington; Columbus, Ohio; and Albany, New York.

The Executive Secretary visited Seattle, Washington and investigated several hotels including the Westin, Sheraton, Madison, Four Seasons, Marriott, Red Lion, Holiday Crown Plaza, and the Hilton. The Marriott and the Red Lion are adjacent to the airport; all of the other hotels are downtown. He recommended a downtown location and favors the Sheraton or Westin.

104-2 REGIONAL ASSOCIATIONS, COORDINATION WITH NCWM

Following up on discussions of the Executive Committee in January 1984 regarding the need to develop closer coordination with the four regional

associations, the OWM assigned Mr. Richard Smith as Regional Coordinator almost a year ago. He has been working with each of the Regional Associations and their committees to coordinate their agendas with those of the NCWM and other Regional Associations.

The Executive Committee continued to explore methods for further improving the coordination of NCWM business with the Regional Associations. Several ideas were recommended for discussion later in the week in the meeting with the Regional Presidents. Additionally, there has been activity in the mid-west to form a new Regional Association. The Conference Chairman had invited the Presidents of the Regional Associations to attend the 1985 Interim Meetings to work with the NCWM Executive Committee to further the common interests. See Reference Key 104-3 for a report on these activities.

104-3 REGIONAL PRESIDENTS' MEETING

Purpose of the Meeting

This meeting, held at the invitation of Chairman Delfino, was chaired by Chairman-Elect Mattimoe.

The four Presidents of the Regional Weights and Measures Associations were in attendance. They explored candidate organizational and procedural changes to improve:

1. operation of the Regional Associations, and

2. coordination among the Regional Associations and between the Regionals and the National Conference.

Agenda of the Meeting

1. Establish objective(s) of closer relationship of Regionals with the NCWM.

2. Define what the NCWM can do to achieve objectives including:

   a. provision of increased coordination through the Regional Coordinator;

   b. insertion of regional mailing lists into the NCWM master file for "target" mailings;

   c. sharing of the NCWM "issues file"; and

   d. coordination of meeting planning and scheduling.

3. Define what the Regional Associations can do to achieve objectives including:

   a. provision of reports and results of committee actions promptly;

b. informing NCWM of local issues and what support they expect from the NCWM;

c. study of national agenda items to develop regional positions; coming to NCWM annual meeting prepared to vote; and

d. encouraging all members to implement national actions.

4. Explore the current activity of mid-west States concerning Regional Associations and encourage coordination of planning so that the result will be beneficial to those and adjoining States, as well as to the strength of weights and measures nationally.

5. Presentation by Richard Smith of an analysis of the mid-west situation, requested by Chairman Delfino, as the basis for exploration of Regional alignments.

6. Discussion of ways that information can be shared and disseminated more effectively, such as trading rosters of officers, committee reports, conference and seminar dates and scheduling, technical problems and their resolution, new equipment and test procedures, industry contacts, and training materials.

Northwest Weights and Measures Association, Reorganization

The Conference Chairman asked the Executive Secretary to work toward reconciliation among the member States of the Northwest Weights and Measures Association and expansion of the Association so that a stronger Association emerges.

The Executive Secretary wrote a memorandum (May 7, 1985) to the members of the Executive Committee, the State Directors of the Northwest area, and the Presidents of the four Regional Associations, proposing an approach to resolve the situation. The memorandum was discussed at the Spring Meeting of the Northwest Weights and Measures Association. The Executive Secretary was advised that the group agreed with his proposals.

A new Constitution and Bylaws for the Association, drafted by the Executive Secretary, was mailed to the Directors on May 31, 1985 with a request that comments be sent to him by June 14, 1985.

Most of the Directors responded with comments in writing; the others were called by telephone. Comments were reviewed by the Executive Secretary, who then modified the draft Constitution and Bylaws and returned the revision to the State Directors on June 28, 1985 so that they would be prepared to resolve all of the comments at a special meeting for this purpose on the afternoon of July 18, 1985 at the Annual Meeting of the NCWM. All comments appeared to be resolvable.

104-4 TRAINING ADMINISTRATION, AND CONSUMER AFFAIRS (Joint Session with the Committee on Education, Administration, and Consumer Affairs).

National Training Program

The Committee on Education, Administration, and Consumer Affairs updated the Executive Committee on the status of the National Training Program, including the financial position of the NBS grant to the NCWM, plans for extension of the grant, status of module development, plans for distribution of the completed modules and module revisions, and the relationship of the Certification Plan and Program Evaluation to the development of modules (see the Report of the Committee on Education, Administration, and Consumer Affairs for details).

Weights and Measures Week

NCWM Publication #7, "Weights and Measures Week Guide," was developed by Peggy Adams (Bucks County, Pennsylvania), printed, and distributed to each of the designated State Weights and Measures Week Coordinators in January, 1985.

The Education Committee plans to continue to develop this material and to expand it into Module 23, "Communications", in the National Training Program.

104-5 TASK FORCE ON COMMODITY REQUIREMENTS

Mr. Richard Thompson (Maryland), Chairman of Task Force on Commodity Requirements, updated the Executive Committee on the status of its work. Appendix B is a copy of the Tax Force's progress report. The Executive Committee is pleased with the progress of this group and encourages all members to study this report.

In March 1985, Task Force Chairman Thompson requested flour data to be collected by State and local weights and measures agencies. Fifteen States and one local jurisdiction provided information. The Task Force wishes to thank all those who were able to help.

On June 11-13, 1985, the Task Force held its third meeting at the National Bureau of Standards. At that meeting:

1. Representatives from the flour industry provided information regarding the milling, packaging, and distribution of flour in the United States. In addition, they developed a mathematical model that fit actual data on weight loss in flour taken by the Food and Drug Administration in the early 1970's. Weight loss as much as 6% was found to occur under some circumstances.

2. Preliminary analysis of flour data from weights and measures jurisdictions was briefly reviewed.

3. The first draft of a memorandum of understanding between USDA and State weights and measures agencies was reviewed and revised.

4. The Task Force was supplied data from California. It also identified the type of data that might already exist in USDA files that would assist in determining the size of the "gray area" for red meat and poultry if wet tare is used to check such packages.

Two meetings are planned in the fall: September 25-27 and December 3-5, 1985. Plans for these meetings include:

1. Determining if the industry-provided mathematical model fits the flour data provided by weights and measures officials.

2. Determining the size of the "gray area" under given conditions for testing packaged flour.

3. Determining if existing data can be used to define the "gray area" for package checks using wet tare for red meat and poultry.

4. Providing a policy and test procedure to be used by weights and measures agencies when inspecting packages of flour, red meat, or poultry.

5. Completing revision of a memorandum of understanding between the USDA and State weights and measures agencies. This memorandum would be forwarded to the Executive Committee for review and a decision on recommendation to the membership for adoption.

6. Providing an administrative procedure to be used by the Conference to address other commodities susceptible to moisture loss.

The Task Force held a special meeting on Wednesday morning, July 17 to brief the membership on the status of Task Force progress and future plans.

104-6 SUBCOMMITTEE ON COMMODITY STANDARDS

The Chairman Mr. Don Stagg (Alabama) reported on the activities and the recommendations of the Subcommittee on Commodity Standards. The Subcommittee studied the following subjects.

Adoption of a Standard

The need for a national standard in package test methods, such as NBS Handbook 133, to be adopted by the NCWM and the States was explored. The Subcommittee considered the actions of the Southern and Western Weights and Measures Associations which recommended the adoption of the Second Edition of NBS Handbook 133 by the Conference on a tentative basis effective January 1986. Additionally, the Subcommittee had information based on an informal polling of the Directors of the States who are members of the Northeast Weights and Measures Association, indicating that a majority favor adoption of the Handbook. The Subcommittee recommended that a voting item be put on the agenda of the 70th Annual Meeting for adoption of NBS Handbook 133, Second Edition.

Post Adoption Management of NBS HB 133

The Subcommittee discussed various alternatives for the management of the evolution of NBS HB 133 if it is adopted by the Conference. They proposed that, upon adoption by the Conference, the Handbook would become an NCWM document, and subsequent changes or additions would be made as a result of formal action by the membership just as NBS Handbooks 44 and 130 are now managed. The NBS role would revert to that of technical advisor.

The Subcommittee was aware that the Executive Committee was reviewing the roles and functions of the standing committees. Therefore, it decided to recommend that the assignment of the management of HB 133 be made by the Executive Committee.

Changes to HB 133

The Subcommittee reviewed the changes incorporated in the Second Edition of HB 133 as well as other candidate recommended changes and additions. They concluded that the Second Edition is now acceptable to most of the State jurisdictions and industry members. Additionally, they noted that the major candidate items for change or addition to the Handbook are being addressed by the Conference. Therefore, the Subcommittee proposes to pass to the appropriate standing committee the list and description of the items for consideration in the evolution of the Handbook.

Subcommittee Chairman Stagg attended the Annual Meetings of the Northeastern and Northwest Weights and Measures Associations and presented a report on the work of the Subcommittee and its recommendations regarding adoption and subsequent evolution of the contents of NBS Handbook 133.

Both of the Associations voted to recommend adoption of the Handbook by the NCWM at its 70th Annual Meeting, thus putting all four Regional Associations in favor of adoption.

Richard Davis, Chairman of the Industry Committee on Packaging and Labeling (ICPL) reported that the ICPL supports the adoption of Handbook 133 by the NCWM.

Executive Committee Recommendations

The Executive Committee:

1. **Recommends adoption of NBS Handbook 133, Second Edition, "Checking the Net Contents of Packaged Goods", October 1984 by the National Conference on Weights and Measures.**

2. Plans to assign management of HB 133, if adopted, to the Committee on Laws and Regulations.

104-7 TASK FORCE ON MOTOR FUELS

Mr. N. David Smith (North Carolina), Chairman of the Task Force on Motor Fuels, updated the Executive Committee on the status of its work which included plans to work in the following areas:

1. A summary of existing State requirements for motor fuel will be finalized.

2. A draft Uniform Motor Fuel Law and accompanying regulations will be reviewed and revised.

See Report of the Committee on Liaison for detailed report.

104-8 TASK FORCE ON INFORMATION SYSTEMS

The Task Force, chaired by Mr. Joe Swanson (Alaska) met during the weekend prior to the Interim Meetings and defined the scope of the Task Force, decided on specific projects to undertake, and developed a workplan including a questionnaire to send to weights and measures jurisdictions to refine information on their needs.

104-9 CUSTOMS

The Commissioner of Customs has requested comments related to a proposal for a system for the accreditation of commercial testing laboratories. Quoting from the Federal Register Notice (Thursday, October 18, 1984), the accreditation procedure will "assess the technical soundness of commercial testing laboratories" that "perform weighing, measuring, and/or gauging of certain commodities to be used in determining the proper rate of duty for the commodities".

The NBS responded with the comment that the National Voluntary Laboratory Accreditation Program (NVLAP) might be considered as the operating agent for such a system, and the States already have laboratories to provide specific services to answer some of the Customs needs.

The Executive Committee requested that the Executive Secretary advise the Conference of any future developments that might affect the States.

NATIONAL TYPE EVALUATION PROGRAM

105-1 POLICY AND PROCEDURES

The business of the National Type Evaluation Program (NTEP) was conducted by the Executive Committee sitting as the Board of Governors of the National Type Evaluation Program (NTEP). The NTEP has been operational since October 1984. To date, 12 Certificates of Conformance have been issued for devices that have met the requirements of HB44. No problems have been encountered that needed remedial action through the Board of Governors or the committees of the Conference.

Policy and Procedures.

The NTEP Policy and Procedures was adopted by the Conference at the July 1984 Annual Meeting. It has been reproduced and printed as NCWM Publication #4. No comments or recommendations have been received by the Executive Committee regarding the Policy and Procedures.

Certificate of Conformance

The Certificate of Conformance was designed and printed by NBS. After initial use, a modification of the format was found necessary to provide additional space to describe "Standard Features and Options" for some cases. The NBS had a second version of the Certificate printed; both versions are available for use depending on the information that must be entered on the Certificate. See Appendix C for the two versions of the Certificate of Conformance.

105-2 NTEP LOGO

The Executive Committee agreed on a general design for an NTEP logo. It is based on the official NCWM logo modified to include the letters NTEP in the center in place of the arm and balance. The Executive Secretary was authorized to proceed with the development of the logo, and to work with the Committee to establish the policy for the use of the logo.

The Executive Secretary balloted the Executive Committee and the Committee unanimously approved:

1. the recommended NTEP Logo;

2. the proposed language for use of the Logo; and

3. the proposed language for use by regulators and industry when referencing approval of devices under NTEP.

The Executive Committee recommends:

1. adoption of the NTEP Logo, and

2. adoption of the following section to be added to NCWM Publication 4,"National Type Evaluation Program, Policy and Procedures" to govern the use of the logo and references to the Certificates of Conformance by others.

The Logo was printed and copies are available from the NCWM office. Black and white glossy copies are free of charge. Multi-color peelable 3 1/2" decals are available at 50 cents each or $40.00 per hundred.

P. REFERENCES TO NTEP ACTIVITIES

The use and effectiveness of the NTEP system depends on the extent to which knowledge of the operation of the system and the results of its evaluations are known and requested.

1. RESTRICTION

Recipients must not claim that the Certificate of Conformance carries with it an endorsement or approval of the product by the National Bureau of Standards.

Issuance of the Certificate of Conformance by the National Bureau of Standards "constitutes evidence of the conformance of a type of device with the requirements of NBS Handbooks 44, 105-1, 105-2, and 105-3" only (see Paragraph C.5 of this document).

2. PERMISSIBLE USE OF STATEMENTS AND NTEP LOGO

a. The Manufacturer

The manufacturer may communicate to clients and the public the fact that a Certificate of Conformance was issued for a device. State officials will automatically receive copies of all Certificates of Conformance issued and will not need to be advised of this fact by the manufacturer.

(1) Statement

The following statement may be used in company correspondence, brochures, and professional, technical, and trade publications:

"Certificate of Conformance (insert Certificate number) was issued under the National Type Evaluation Program of the National Conference on Weights and Measures"

(2) Logo

The NTEP Logo (see below) may be:

- used in conjunction with the above statement as well as in advertising materials for the device for which the Certificate of Conformance was issued; and

- affixed to any device manufactured as being the same as the NTEP approved device. However, sale and use of individual devices manufactured are subject to acceptance testing by State and local jurisdictions.

b. The States

States participating in the NTEP (permitting the sale of devices in their States based on the NTEP Certificate of Conformance) and/or States operating NTEP testing laboratories are encouraged to communicate their activities to potential clients and the public. NTEP authorization means that a laboratory is competent to perform standard tests of specific weighing or measuring devices (see Section C. Definitions).

A statement about the States participation and/or authorization and the NTEP logo may be used in correspondence, brochures, and test reports and data sheets (provided the tests or services are performed in accordance with the terms of its authorization).

(1) Statement

A State whose laboratory is authorized may use the following statement:

"Authorized by the National Bureau of Standards under the National Type Evaluation Program (NTEP) for testing — (identify device types covered by the Authorization Certificate)".

A State accepting a Certificate of Conformance may use the following statement:

"(Name of State) — permits the sale of weighing or measuring devices for use based on the issuance of the NTEP Certificate of Conformance".

(2) Logo

The NTEP Logo (see below) may be used in conjunction with the above statements as well as alone in materials dealing with the NTEP.

Figure 2 - NTEP Logo

c. Questions About Use of Statements or Logo

Any questions regarding the use of the statements or logo not specifically covered above, or any questions concerning the propriety or acceptability of their use in a particular situation, should be brought to the attention of the NTEP Board of Governors through the NCWM Executive Secretary.

d. The NTEP Logo

Glossy black and white positives, and adhesive backed copies of the logo, are available from the NCWM office.

105-3 INDEX OF DEVICE EVALUATIONS

NCWM Publication #5, "National Type Evaluation Program - Index of Device Evaluations", has been published. It contains listings of all the:

1. Reports of Test issued under the prior Prototype Program of the National Bureau of Standards,

2. Certificates of Conformance issued by the National Bureau of Standards under the National Type Evaluation Program, and

3. related addendums to each of the above.

Three listings are provided:

1. alphabetical by company;

2. alphabetical by type of device; and

3. chronological by class, Report of Test number, and Certificate of Conformance number.

The system will accept information on future evaluations under NTEP.

105-4 UNIFORM REGULATION FOR NTEP

The Executive Committee reviewed the status of the adoption of the Uniform State Regulation for National Type Evaluation. Based on information provided as of December 31, 1984, eighteen (18) States and one (1) city are officially using the Uniform Regulation or its provisions as follows:

Uniform Regulation adopted and in effect in four (4) States (California, Connecticut, North Carolina, Ohio) and one (1) city (Kansas City);

Uniform Regulation in the process of adoption in four (4) States (Alabama, Florida, Illinois, New Mexico); and

provisions of the Uniform Regulation being applied under State administrative procedures in ten (10) States (Arkansas, Delaware, Georgia, Hawaii, Kansas, Maine, Mississippi, New Hampshire, New York, West Virginia).

105-5 LABORATORY AUTHORIZATION

A new handbook, NBS Handbook 143, "State Weights and Measures Laboratories - Program Handbook," has been published. Part I of the Handbook describes the procedures followed by NBS in certifying State weights and measures laboratories for the production of reliable metrological measurements. Part II describes the procedures followed by the NBS in the authorization of state laboratories to conduct device evaluations under the National Type Evaluation Program (NTEP).

At the time of the Interim Meetings, California and the Federal Grain Inspection Service qualified as NTEP laboratories. The NBS was working with Alabama, New York, and Ohio toward authorization of their laboratories.

The Weights and Measures Laboratory of the State of Ohio was authorized as a testing facility under NTEP on April 1, 1985. A ceremony of dedication was held at the Ohio laboratory on June 24, 1985. Governor Richard Celeste of Ohio and Albert Tholen of NBS addressed the attendees. Mr. Tholen presented the NBS certificate of authorization to Director of Agriculture Locker who in turn presented it to the Governor.

105-6 NBS ROLE IN NTEP

NBS Special Publication 250, Appendix, "Calibration and Related Measurement Services," has been revised to define the role of NBS in the NTEP.

105-7 RELATIONSHIPS OF NTEP, HB 44, AND W & M LAW

Due to many recent new developments in the device inspection and control activities of the NCWM,there is considerable confusion about the inter-relationships of the NTEP, Handbook 44 and its new Scales Code, and the roles of the NCWM, the States, and the NBS. The Executive Secretary developed a paper, "Relationships among Weights and Measures Law, Handbook 44, the new Scales Code, and the NTEP" for use as his presentation to the members of the Scale Manufacturers Association. After review of this paper by the Executive Committee, the Committee recommended that the Executive Secretary reproduce the paper as a NCWM Information Bulletin and distribute it to all State Directors and industry members participating in the NTEP.

The paper was edited and printed as NCWM Weights and Measures Information Bulletin #8.

105-8 NTEP BROCHURE

One of the tasks to be completed for the NTEP is the development of an "NTEP Brochure" that succinctly provides information about the purpose of NTEP, its benefits, and how a company uses the system. The Executive Secretary agreed to draft a brochure for review at the Interim Meeting in January 1986.

105-9 LOAD CELL INTERCOMPARISON

On Wednesday, January 30, 1985, during the Interim Meetings, a special meeting was held at the NBS to plan for establishing a program for the intercomparison of facilities used for the testing of load cells. Such a program would involve the United States (NBS), Great Britain, The Federal Republic of Germany, The Netherlands, and Australia. The purpose of the program is to develop the basis for reciprocity among the participating nations with respect to acceptance of approvals of load cells for use in commercial devices.

Success of this program will provide opportunities for enrichment of the National Type Evaluation Program. Testing check lists and protocols will have been established, and testing equipment and skills defined. The development of the intercomparison program is being coordinated by Mr. David Edgerly, NBS, who, with his comprehensive understanding of the NTEP, will be bringing the interests of the two together.

Ezio Delfino, California, Chairman

G. Mattimoe, Hawaii, Chairman-Elect
S. Hindsman, Arkansas, Past Chairman

J. Bartfai, New York
C. Forester, Texas
L. Holloway, Idaho
F. Nagele, Michigan
N. Ross, Nebraska
R. Walker, Indiana

C. Gardner, New York, Treasurer
A. Tholen, NBS, Executive Secretary

EXECUTIVE COMMITTEE

Appendix A - NCWM FY 70 (July 1, 1985-June 30, 1986) Budget
Appendix B - Task Force on Commodity Requirements, Progress Report
Appendix C - Certificates of Conformance

APPENDIX A

OPERATING BUDGET 1985-86

(July 1, 1985 - June 30, 1986)

INCOME			
1.1	REGISTRATION FEES		30,000[1]
1.2	MEMBERSHIP FEES		45,500[2]
1.3	TRAINING MODULES		2,825[3]
1.4	INTEREST		1,300[4]
1.5	PROMOTIONAL ITEMS		
	1.5.1 Tie Tacks		2,500[5]
	1.5.2 Ties		3,800[5]
1.9	MISCELLANEOUS		200
			86,125[6]
DISBURSEMENTS			
2.0	ANNUAL MEETING		14,000
3.0	INTERIM MEETINGS		23,000
5.0	SPECIAL PROGRAMS		17,000[7]
	5.1 L&R CTE	0	
	5.2 ED CTE.	4,000	
	5.3 NTEP	2,500	
	5.4 OIML*	2,500	
	5.5 TF CR	2,500	
	5.6 S&T CTE	1,000	
	5.7 OTHER	500	
	5.8 TF MF	2,000	
	5.9	2,000	
6.0	CHAIR EXPENSES		10,000[8]
	6.1 CHAIRMAN	7,500	
	6.2 C-ELECT	2,500	
7.0 MEMBERSHIP PROGRAM			4,500[9]
8.0 PRINTING			1,500[10]
9.0 ADMINISTRATION			7,600[11]
11.0 PROMOTIONAL ITEMS			2,427[12]
	11.1 Tie Tacks 69th		
	11.2 Ties		
12.0 TRAINING MODULES			2,500[13]
			82,527[14]
	Under (Over) Budget		3,598

*$8,000 authorized by NCWM Policy

NOTES

1 The Registration Fee has been $85.00 ($50.00 Fee and $35.00 NCWM Membership). As a result of action by the Executive Committee taken at the Interim Meetings of the Conference in Jan. 1985, the Registration Fee was raised to $135.00 ($100.00 Fee and $35.00 NCWM Membership). Total estimated Fee income is 300 x $100.00 = $30,000.

2 The NCWM Membership portion of the Registration Fee is still $35.00 per registrant. Estimated Membership Fee income from the Annual Meeting is therefore 300 x $35.00 = $10,500. Additionally, the estimated Membership income from the Spring mailing is 1,000 x $35.00 = $35,000. Total estimated income from Memberships is $45,500.

3 Estimated income from sale of documents is $2,825 derived from the sale of training modules as follows:

Training

Module 27 - 50 Student Manuals	$15.00	=	$750.00
10 Instructor Manuals	$20.00	=	200.00
Module 1 - 25 Student Manuals	$20.00	=	500.00
5 Instructor Manuals	$25.00	=	125.00
Module 2 - 50 Student Manuals	$20.00	=	1000.00
10 Instructor Manuals	$25.00	=	250.00
Total			2825.00

4 Because of the deficit spending, the average assets earning interest will be reduced from approximately $50,000 to $25,000; interest rates are also less than during the last year. Estimated interest income has been reduced to $1,300.

5 Assumes all supplies on hand are sold in this FY.

6 Total estimated income is $86,125 an increase of $14,750 over 69th FY derived mostly from the increase in the Registration Fee.

7 The largest overrun in the 69th Budget was in this account. Because of the establishment of new task forces coupled with the decrease in the funding of committee activities by the home jurisdictions of the State and local government members of the committees, the incurred expenses exceeded budgeted by $14,000 ($21,000 - $7,000). The 70th Budget of $17,000 will be difficult to control unless expenses billed to the NCWM can be reduced. This can be achieved by a combination of assumption of expenses by the jurisdictions and searching for the least cost air fares, hotel and meal costs.

8 No change.

9 Slight decrease due to change in printing supplier.

[10] The reduction of the budgeted amount by $4500.00 brings this account back to the levels in prior years. The past year was high because of the large number of new NCWM publications established in the program to formalize the organization and procedures of the Conference.

[11] An increase to cover costs of depreciation of computer terminal, printer ($1,800 based on depreciating $9,000 capital expenditure over a five year period) and maintenance and use of mailing list (handled on contract).

[12] Cost of ties

[13] Cost of reproducing modules for sale.

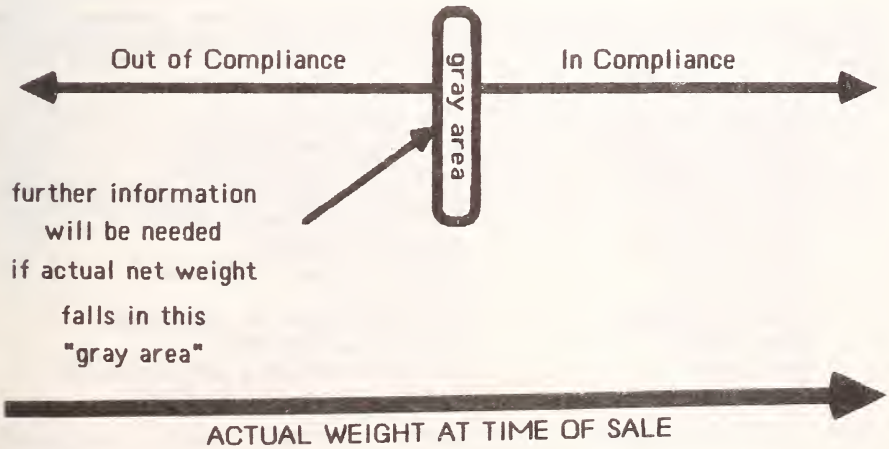
[14] An increase of approximately $1,000 overall is proposed. The total proposed budget of $82,527 should be attainable with careful control over printing and special program costs. This proposal will also generate an operating surplus of $3,598 which is recommended as prudent planning.

APPENDIX B

PROGRESS REPORT OF THE TASK FORCE ON COMMODITY REQUIREMENTS

Executive Summary:

- Federal and State laws and regulations require accuracy of net contents statements on prepackaged goods.
- The National Conference on Weights and Measures (NCWM) has set a policy of "net weight at the time of sale."
- Federal and State laws and regulations both require that reasonable variations for moisture loss be recognized. Neither the NCWM nor consumer organizations have been able to bring about a change in these portions of our laws and regulations at the National or State levels.
- The NCWM established the Task Force on Commodity Requirements with the goal of resolving the moisture loss issue in the areas of red meat, poultry, and flour.
- The Task Force on Commodity Requirements proposes to formulate "Compliance Testing Procedures for Products Subject to Moisture Loss" to assist weights and measures officials in determining whether packages comply with the laws and regulations.
- The Task Force will use red meat, poultry, and flour as pilot cases for developing the specific numbers and procedures to be used.
- The compliance testing procedures will be based on the following model:



- The Task Force objectives are:
  - To decide where the borders of the "gray area" begin and end based on data submitted to it by weights and measures officials and industry representatives.
  - To formulate procedures that will build in assurances, as much as possible, against abuse.
  - To work towards the establishment of a formal Federal-State understanding between USDA (Meat and Poultry) and States.
- The Task Force is encouraged by the willingness of business, Federal Government, and weights and measures representatives to specify what they are willing to do to meet these objectives.

PROGRESS REPORT

The Task Force on Commodity Requirements was established by NCWM Chairman Ezio Delfino at the 69th Annual Meeting in Boston, August 2, 1984.

Mr. Delfino gave as a specific charge to this Task Force the resolution of the "MOISTURE LOSS" issue in the areas of red meat, poultry, and flour. He asked that the Task Force apply three criteria to any proposal; that it be:

- fair to packagers,
- verifiable by regulatory agencies, and
- permit value comparison by consumers.

The Task Force added the following criteria:

- fair to all retailers, large and small
- applicable to all products subject to moisture loss, not just red meat, poultry, and flour.

The membership of this Task Force has been drawn from business, Federal agencies, consumer interests, and the four weights and measures regions, and are:

Richard L. Thompson	Maryland (CHAIRMAN)
Mahlon A. Burnette	American Meat Institute
Kenneth Butcher	Maryland (Southern WMA)
Charles Cavagnaro	U.S. Office of Consumer Affairs
Paul Engler	Los Angeles (Western WMA)
Edward Heffron	Michigan (NWWMA)
Tom Klevay	Millers' National Federation
Kenneth May	Holly Farms
John McCutcheon	U.S. Department of Agriculture
Allan Nelson	Connecticut (NEWMA)
John Taylor	U.S. Food and Drug Administration
Carroll Brickenkamp	National Bureau of Standards

Three meetings have been held:

- a one-day meeting November 28, 1984
- a 1 1/2 day meeting January 17 and 18, 1985
- a three day meeting June 11-13, 1985

Another three-day meeting is planned in the summer of 1985.

The Task Force first focussed on defining the issue. The discussion below describes moisture loss and the circumstances in commerce that presently exist because of this issue.

What is "Moisture Loss"

Federal interpretation of reasonable variations as permitted in the law allows a group of identical packages of red meat, poultry, or flour, for example labeled one pound at the packing plant, to weigh one pound "on the average". This means that the contents of each package could actually weigh slightly more or slightly less than one pound; however, when all the package content weights are summed together and divided by the number of packages, that resultant number (the average) would have to at least equal the labeled weight of one pound. State requirements hold packages to this same requirement. State and Federal requirements also permit "...reasonable variations caused by loss or gain of moisture during the course of good distribution practices...."[1] If a group of packages that are not air tight are exposed to environmental conditions of temperature and relative humidity under which moisture will evaporate, all packages lose weight. Some packages will lose less than others because they are insulated by packages around them or for other reasons; but certainly no packages will gain moisture while identical packages at the same time lose moisture--if the relative humidity and temperature remain stable. Therefore, the average net weight will fall as moisture is lost. If the average net weight of a group of packages was one pound at the packing plant and if those packages lost moisture while being shipped, the average net weight would be less than one pound when tested at the retail store.

The Present Dilemma

Seven years ago, on March 29, 1977, the U.S. Supreme Court decided that "...the State law must yield to the Federal...."; that is, part of a California law was preempted by Federal law and regulations. Neither California law nor regulations (at that time) permitted "reasonable variations caused by loss or gain of moisture during the course of good distribution practices..." Although most State regulations did at the time of the court decision and do specifically now permit such variations, the issue of moisture loss is still unresolved, because of many factors, only a few of which will be listed here:

---

[1]Quotation from Federal regulations 9CFR§317.2(h)(2) and 21 CFR§101.105(q)

- State and local weights and measures regulatory agencies are the primary compliance testing resource at the retail store. Most weights and measures agencies require packages that are put up by the retail store to be at or above net weight at time of sale (that is, the average net weight of the packages must equal or exceed the labeled net weight declaration). Many of these agencies use a dry (unused) tare when checking net weight; this practice allows for moisture lost into the packaging materials by counting such moisture as part of the net weight. (Moisture lost to evaporation is not accounted for by this method.) Products that are subject to moisture loss, and packaged at some location other than the retail store must, by State and Federal requirements, be permitted variations due to moisture loss. Weights and measures officials cannot tell by any practicable field test whether short weight at time of sale for these products is due to moisture loss or short weight at time of pack. This problem is treated in a variety of ways by weights and measures officials, including:

  - Some do not test such products because of the confusion concerning what standards to apply.

  - Some require net weight at time of sale.

  - Some provide a fixed tolerance for one, two, or all three categories of packages (e.g., meat, poultry, and flour).

  - Some follow up retail inspection with wholesale or packaging plant tests in which full net weight is required at these latter locations.

- Packagers who ship their products interstate are treated differently depending upon destination and the product shipped.

  - In some jurisdictions, packages susceptible to moisture loss are tested, but in other jurisdictions no tests are made.

  - Flour may be given a 2% allowance by one State and no fixed allowance (or no allowance at all) by a neighboring State.

  - Flour may be given an allowance in one State, but red meat may receive no allowance in that same State.

  - Packagers of bulk packages of poultry sometimes will be back-billed by a large supermarket chain because the destination weight is less than the invoiced (when-packed) weight, but packagers of consumer-sized packages of poultry are given a moisture loss allowance by some jurisdictions.

These situations have arisen due to the lack of guidance.

- Retailers who sell bulk-packed products in "direct sales" over a scale to a consumer must deliver full weight at the time of sale. Retail store packaged goods may also be required to be full weight at the time of sale. The bulk-packed product, however, may be permitted moisture loss such that it may arrive at the retail store with less (on the average) than is declared on the label.

- Consumers take a great deal for granted in the area of net weight labeling. Few consumers know that the labeled net weight on an individual package is an "average" declaration; that, in fact, each package may not contain at least what the label declares. With the present conditions of full net weight being required over a scale, and the moisture loss permitted for prepackaged items, a consumer who wishes to compare the price per pound of flour, red meat, or chicken prepackaged for the consumer by a packager in a distant State cannot make a value comparison between such a package and the same product individually weighed for him at a retail store (which may come from the same source packager in a bulk package to the same retail store). Net weight is not defined as the amount of solids in a package.

Conclusions

Existing Federal and State regulations permit a variety of interpretations concerning moisture loss by regulatory officials, packagers, and consumers. These interpretations result in inequities to the consumer, to various packagers, and to retail and wholesale marketers. A national policy with a single interpretation of the regulations is needed. Changes to some regulations may be needed. Compliance testing standards should be developed that are compatible at all levels of government (Federal, State, and local) verifiable, and fair to all levels of marketing (production point through retail).

What about existing laws and regulations?

Both Federal and State laws and regulations require accuracy in net contents labeling. Test methods that require that the average net contents equal or exceed the labeled net contents are accepted by both Federal and State agencies as suitable for determining whether packages comply with these and other regulations that also requrie recognizing "reasonable variations for good manufacturing practices". Those regulations that require recognition of "reasonable variations casued by loss or grain of moisture..." are at issue. It **is the opinion of the Task Force members that neither the NCWM nor consumer organizations have the influence or organized constituency to bring about repeal of these sections of our laws or regulations at the National or State levels.**

How can we reconcile moisture loss requirements with NCWM policy of "net weight at the time of sale"?

The Task Force supports and applauds the NCWM policy of "net weight at the time of sale"; however, there are areas of ambiguity in this policy that need to be better defined. "Net weight at time of sale" means that:

1. Inspection and test at retail is imperative (but not necessarily the only means) for determining whether both good distribution as well as good manufacturing practices have been followed.

However, the following fact is also part of a "net weight at time of sale" policy:

2. Because reasonable variations for good manufacturing practice are recognized, some packages purchased by a consumer will contain less than what is stated on the label. (The average concept means that some packages can weigh less than the label as long as other packages compensate for these short-weight ones.)

The Task Force members believe that it is necessary to recognize an additional fact in the "net weight at time of sale" policy.

3. Because reasonable variations for good distribution practice must be recognized, some packages, because of their physical properties, the way they are packaged, and the environmental history they undergo, will contain less than what is stated on the label. (This is the basis of the moisture loss issue and recognizes that certain types of commodities - for example, flour - in certain types of packages - for example, in a paper wrap - in certain situations - for example, in a dry climate for three months after packaging - will contain less than the labeled weight.)

What the Task Force Proposes to Do

The Task Force members believe that national guidelines are needed to serve as ground rules for fair play and to provide equitable conditions for commerce.

The basis for these national guidelines has already been established by the publication of the Second Edition of NBS Handbook 133. This provides sampling and test procedures that, if followed, reduce the ambiguity of requirements for packagers and inspectors in net contents compliance. The Task Force looks forward to the adoption of Handbook 133 by the NCWM and to the annual review and amendment process, which will keep the manual up-to-date and effective.

The Task Force intends to formulate "Compliance Test Procedures for Products Subject to Moisture Loss". These procedures should be operationally realistic and be designed to assist a field inspector in determining whether packages comply with the laws and regulations.

The Task Force proposes using red meat, poultry, and flour as the pilot cases for developing the actual numbers and procedures to be used. Input from regulatory agencies and business representatives will be used as the basis for these numbers and procedures.

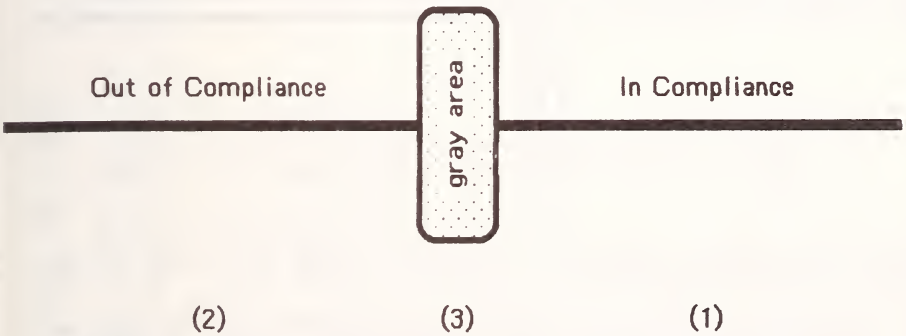
Additionally, the Task Force will seek to build into the procedures, assurances against abuse. A model of the Task Force approach follows.

Compliance Test Procedures for Products Subject to Moisture Loss

The compliance test procedures will be based on the following model:

Consider the actual average weight found at retail inspection to be like points on a "ruler":

The compliance test model can be pictured as fitting on top of this ruler:



Thus, the vast majority of packages tested by the inspector will fall into two categories:

(1) If the average net contents is above a value as yet to be specified, the inspected lot will be considered to comply with the regulations.

(2) If the average net contents falls below some other value (also to be specified), the inspected lot will be considered to be out of compliance with the regulations.

(3) A small percentage of package lots will fall into a third area called the "GRAY AREA" on the ruler. If the average net contents falls in this gray area, further information must be gathered in order to make

a final decision on whether the inspected lot does or does not comply with the regulations.

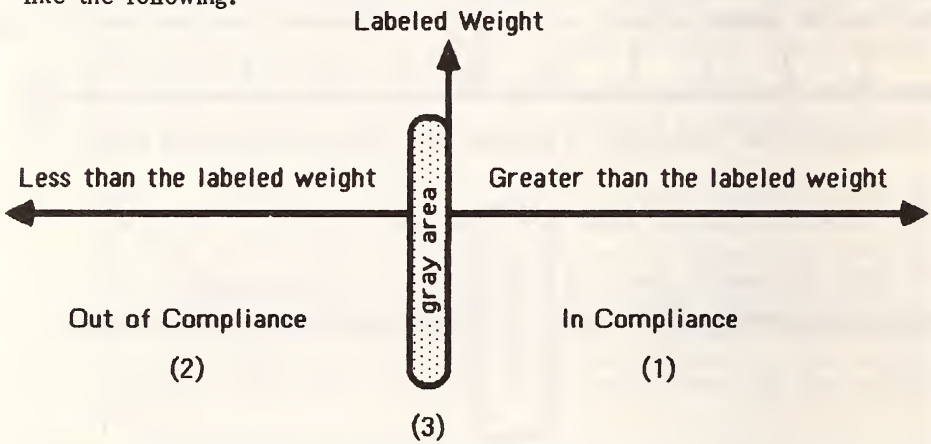
Two Examples

For discussion purposes, subdivide moisture loss in packaged goods into two "types":

- Moisture lost into the packaging materials. Moisture lost from fresh meat and poultry is principally of this type.
- Moisture lost into the atmosphere. Moisture lost from flour is of this type.

Moisture Loss in Fresh Meat and Poultry

The compliance test procedure model for fresh meat and poultry would look like the following:



A small "gray area" extends from the labeled weight to the left (in the direction of less than the labeled weight).

(1) To the right (1); inspected lots are in compliance if the average net weight is equal to or greater than the labeled net weight. It does not matter what kind of tare was used to determine an "in-compliance" condition.

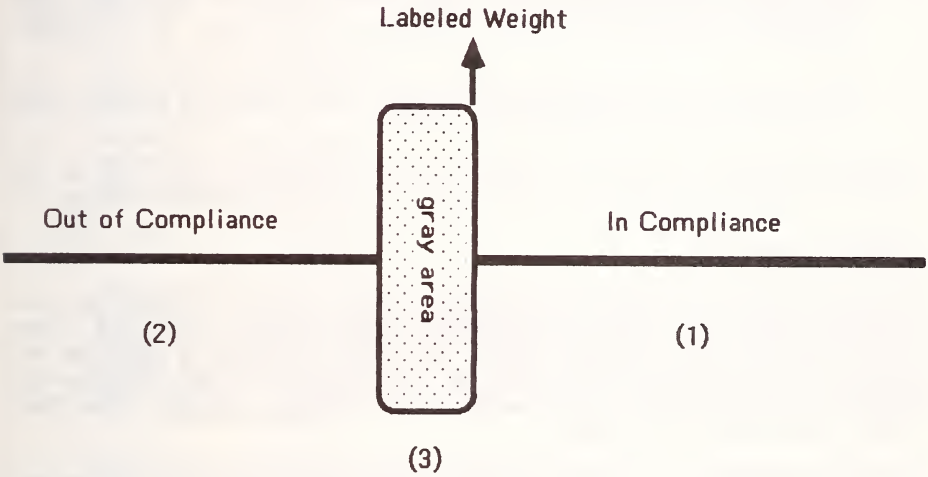
(2) To the left (2), inspected lots are out of compliance if the average net weight falls in this segment of the "ruler". It does not matter what kind of tare is used to determine this out-of-compliance condition.

(3) Inspected lots fall into the "gray area" (3) on the ruler only if the net weight is determined using wet tare or by not counting free liquid as part of the net weight. The steps necessary to deal with lots that fall into the gray area must still be determined.

There would be no gray area if dry tare were used to determine compliance. Any inspected lot of packages whose average net weight is found with dry tare to be less than the labeled weight is automatically be out of compliance.

Moisture Loss in Flour

The compliance test procedure model for flour is the following:



(1) To the right (1), inspected lots are in compliance if the average net weight is equal to or greater than the labeled net weight.

(2) If the average net weight of inspected lots fall to the left (2), the lots are out of compliance.

(3) If the inspected lots fall in the "gray area" (3), the field inspector must collect a sample and send it to the State laboratory for a moisture content test before a final determination is made on lot compliance or noncompliance. (Meanwhile, the inspected lot may be put on "hold" pending possible court action if inspected lots fail to comply).

Summary of Method

If the inspected lots fall in segments (1) or (2), no further testing or investigation is necessary by field inspection forces in order to declare the lots in or out of compliance. Only in the "gray area" (3) will additional inspection efforts be required by testing or investigation beyond the field inspector's routine. Therefore, the Task Force will make every effort to reduce this "gray area" to an absolute minimum.

One question before the Task Force and before the Conference is: Where should the boundary of the "gray area" be for flour - the points at which additional testing will be required to determine compliance?

- If the right edge of the gray area begins wherever an inspected lot average net weight falls below the labeled net weight, will too many laboratory tests have to be conducted?

- If the right edge of the gray area begins at one or two percent less than the labeled weight, will this permit abuse of such field test screening procedures by short weighing on the part of the packager?

- What facts or data can be used to set the left edge of the gray area in order to limit the size of gray area?

Another question that must be resolved is: How can the gray area in red meat and poultry testing (using wet tare for example) be better defined?

Critical Assurances

The Task Force members realize that the key element to making any test method workable is to build in assurances against abuse. The Task Force will continue to refine these methods with such assurances in mind. An essential outcome of this effort will be to delineate the responsibilities of industry, Federal agencies, and weights and measures officials. The Task Force will continue to discuss:

- the feasibility of providing up-to-date dry tare samples to weights and measures offices or to a central source by red meat and poultry packagers;

- the documentation that a packager has to maintain concerning in-plant net weight (and for flour-moisture content) records;

- guidance concerning suitability and maintenance of in-plant scales; and

- the reconciliation of different definitions of a lot as established for USDA meat and poultry inspection and the "lot, shipment, or delivery" that weights and measures officials use.

A critical objective in this effort is to establish formal working relationships (1) between USDA Meat and Poultry and the States, and (2) among the States themselves.

Establishment of Cooperation Between USDA and the States

Two Federal regulatory agencies are represented on the Task Force. USDA Meat and Poultry Inspection operates continuously at the packaging and processing plants. A Federal seal is put on all packages that leave a Federal plant. The seal indicates that the Federal government has inspected the product and that it meets all Federal requirements; e.g., that it is wholesome, unadulterated, and accurately labeled.

In contrast, FDA inspection is similar to weights and measures inspection, except for where it takes place. FDA inspectors are not continuously in any single plant; they test occasionally at a plant or warehouse just as weights and measures inspectors do at retail. They do not certify any lot or product with a seal.

Because of these differences, the Task Force has decided to explore a formal model agreement between USDA and the States that would delineate, for example:

- each agency's jurisdiction
- procedures to be followed in a plant inspection
- appeal system
- suitability of equipment
- definition of the lot
- procedures for recall.

At the June 11-13 meeting:

- Representatives from the flour industry provided information regarding the milling, packaging, and distribution of flour in the United States. In addition, they developed a mathematical model that fit actual data on weight loss in flour taken by the Food and Drug Administration in the early 1970s. Weight loss as large as 6% was found to occur under some circumstances.

- Preliminary analysis of flour data from weights and measures jurisdictions was briefly reviewed.

- The first draft of a memorandum of understanding between USDA and State weights and measures agencies was reviewed and revised.

- The Task Force was supplied data from California and also identified the type of data that might already exist in USDA files that would assist in determining the size of the "gray area" for red meat and poultry if wet tare is used to check such packages.

The Task Force held a special meeting on Wednesday morning, July 17, 1985 to brief the membership on the status of Task Force progress and future plans.

Two meetings are planned in the fall: September 25-27 and December 2-4, 1985. Plans for these meetings include:

- Determining if the industry-provided mathematical model fits the flour data provided by weights and measures officials.

- Determining the size of the "gray area" under given conditions for testing packaged flour.

- Determining if existing data can be used to define the "gray area" for package checks using wet tare for red meat and poultry.

- Providing a policy and test procedure to be used by weights and measures agencies when inspecting packages of flour, red meat, or poultry.
- Completing revision of a memorandum of understanding between the USDA and the State weights and measures agencies. This memorandum would be forwarded to the Executive Committee for review and a decision on recommendation to the membership for adoption.
- Providing an administrative procedure to be used by the Conference to address other commodities susceptible to moisture loss.

APPENDIX C

U.S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
GAITHERSBURG, MARYLAND 20899

CERTIFICATE NO._____

Page of

Certificate of Conformance

For Weighing and Measuring Devices

For:	Submitted by:
Accuracy Class:_____	

Standard Features and Options

This device was evaluated under the **NATIONAL TYPE EVALUATION PROGRAM (NTEP)** and found to comply with the applicable technical requirements of **NBS HANDBOOK 44,** "Specifications, Tolerances, and Other Technical Requirements for Commercial Weighing and Measuring Devices".

Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages. For further information, contact the National Bureau of Standards, address above, or telephone (301) 921-2401.

Date:

_____
Chief, Office of Weights and Measures

NOTE: The National Bureau of Standards does not "approve", "recommend", or "endorse" any proprietary product or material, either as a single item or as a class or group. Results shall not be used in advertising or sales promotion to indicate explicit or implicit endorsement of the product or material by the Bureau. (See NTEP Policies and Procedures).

U.S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
GAITHERSBURG, MARYLAND 20899

CERTIFICATE NO._____

Page of

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REPORT OF THE COMMITTEE ON LAWS AND REGULATIONS

Edward Skluzacek, Chairman
Director, Weights and Measures Division
State of Minnesota

REFERENCE KEY

200 INTRODUCTION

The Committee on Laws and Regulations submitted its Report to the 70th Annual Meeting of the National Conference on Weights and Measures (NCWM). The report contains the recommendations of the Committee formed on the basis of written and oral comments received during the year. The report consists of the Interim Report as offered in the Conference Announcement and as amended by Addendum Sheets developed during the Annual Meeting.

After its component items were voted upon, or in some cases withdrawn, the Report was adopted in its entirety by a hand vote of the membership.

The report consists primarily of proposals to revise or amend National Bureau of Standards Handbook 130, 1985 Edition, "Uniform Laws and Regulations."

The following number sequence for the Reference Key Items was used to group items into categories:

201	Handbook 130 - General
202	Uniform Weights and Measures Law
203	Uniform Weighmaster Law
204	Uniform Packaging and Labeling Regulation
205	Uniform Regulation for the Method of Sale of Commodities
206	Uniform Unit Pricing Regulation
207	Uniform Regulation for the Voluntary Registration of Servicepersons and Service Agencies for Commercial Weighing and Measuring Devices
208	Uniform Open Dating Regulation
209	Uniform Regulation for National Type Evaluation
210	Other Items

This year's report did not contain any items in categories 203, 206, 207, or 209.

Proposed revisions to Handbook 130 are shown in **bold face print** and by crossing out what is to be deleted, and underlining what is to be added. Entirely new sections to Handbook 130 are designated as such and are also shown in **bold face print.**

REFERENCE KEY ITEMS CONTAINED IN THE REPORT

Table A lists in numerical order all of the Reference Key Items contained in the Report.

The Reference Key numbers and titles of **voting items** are identified in **bold face print.** All other items are informational only.

Individual Voting Item

One item was presented for separate vote.

205-4 Proposed Section 1.7.1.1. Ice Cream and Frozen Dessert Novelties

A motion was made to amend this item to propose the method of sale of frozen dessert novelties by net weight. The vote to debate the proposed amendment was defeated (State Representatives 17 Yea; 20 Nay: Delegates 39 Yea; 25 Nay).

Item 205-4 as recommended by the Committee was then defeated (State Representatives 35 Yea; 7 Nay: Delegates 34 Yea; 38 Nay).

See discussion of item for details.

The defeat of this item results in no recommended method of sale for this commodity.

Consent Calendar

Those voting items that were grouped into a "Consent Calendar" are indicated by a "**C**" following the Reference Key Number (e.g., **202-1 C**). The Consent Calendar was adopted (State Representatives 46 Yea, 0 Nay: Delegates 69 Yea; 0 Nay).

Withdrawn Items

Two items, 202-3 and 204-3, were withdrawn as voting items from the report. They are printed in the report for reference purposes only.

The Committee members were unanimously of the opinion that the recommended language changes that were proposed in its interim report are not improvements over what is presently recommended in Section 11.15. of the Uniform Weights and Measures Law and Section 12.1.2. of the Uniform Packaging and Labeling Regulation. In the opinion of the Committee members, the Supreme Court decision was based on the fact that California did not allow for reasonable variations for moisture loss. In contrast, the

NCWM recommendations in Handbook 130 do recognize moisture variations. The Committee believes that the question of how to deal fairly with products undergoing moisture variations is being addressed by the Task Force on Commodity Requirements.

Table A
REFERENCE KEY ITEMS

Reference Key No.	Item Title
	HANDBOOK 130 - GENERAL
201-1	Deletion of Certain Dates
	UNIFORM WEIGHTS AND MEASURES LAW
202-1 C	**Section 1.1. Weight(s) and (or) Measure(s)**
202-2 C	**Proposed Section 10. Requirements for Type Evaluation**
202-3	**Section 11.15. Use of the Term "Intrastate"**
	UNIFORM PACKAGING AND LABELING REGULATION
204-1 C	**Sections 6.5.(b), 6.6.(b), 7.4.(b), and 7.5.(b) - Add Reference Temperatures for Alcoholic Beverages**
204-2 C	**Proposed Section 10.12. Variations From Declared Thickness of Polyethylene Products**
204-3	**Section 12.1.2. Variations Resulting from Exposure**
	UNIFORM REGULATION FOR THE METHOD OF SALE OF COMMODITIES
205-1 C	**Section 1.3. Butter, Oleomargarine, and Margarine: Margarine-like "Spreads"**
205-2 C	**(a) Section 1.5. Meat, Poultry, and Seafood**
205-2	(b) Proposed Section 1.5.3. Clams, Mussels, and Oysters
205-3 C	**Section 1.7.1. Prepackaged Ice Cream and Similar Frozen Products**
205-4	**Proposed Section 1.7.1.1. Ice Cream and Frozen Dessert Novelties**
205-5 C	**Section 1.11. Sale of Meat by Carcass, Side, or Primal Cut**
205-6 C	**Section 2.19. Gasoline-Alcohol Blends**
205-7	Proposed Section 2.20. Liquified Petroleum Gas
205-8	Proposed Section 2.21. Borax
	UNIFORM OPEN DATING REGULATION
208-1 C	**Revision of the Uniform Open Dating Regulation**
	OTHER ITEMS
210-1	Cash/Credit Sales and Labeling of Motor Fuel Dispensers
210-2	Adoption of NBS Handbook 133

DETAILS OF ALL ITEMS FOLLOW IN NUMERICAL ORDER

REFERENCE KEY

201-1 DELETION OF CERTAIN DATES

(This is an Information Item.)

There are several sections in Handbook 130 that refer to dates recommended by the Conference for certain requirements to take effect (in the event States should adopt the requirements prior to those dates.) These dates are now past and the Committee will delete them from the handbook. Even though the deletions are editorial in nature, since the Conference took action to establish these dates, the Committee members wish to inform the Conference of the deletions. They are:

UNIFORM PACKAGING AND LABELING REGULATION

6.1. GENERAL. — The metric and inch-pound systems of weights and measures are recognized as proper systems to be used in the declaration of quantity. Units of both systems may be presented in a dual declaration of quantity. ~~Except where additional exemption is otherwise provided herein, all metric labeling requirements affected by this 1978 revision shall apply to labels: (a) revised after the effective date of this regulation or (b) as of July 1, 1980, whichever occurs first.~~

UNIFORM REGULATION FOR THE METHOD OF SALE OF COMMODITIES

SECTION 1. FOOD PRODUCTS

1.1.(b) Metric Capacities - 250 milliliters, 500 milliliters, or 1 liter. ~~(Effective January 1, 1982)~~

1.2.(b) Metric Weights - 250 grams, 500 grams, 750 grams, or a multiple of 500 grams. ~~(Effective January 1, 1982)~~

1.3.(b) Metric Weights - 125 grams, 250 grams, 500 grams, or a multiple of 500 grams. ~~(Effective January 1, 1982)~~

1.4.(b) Metric Weights - 1, 2.5, 5, 10, 25, or 50 kilograms. ~~(Effective January 1, 1982)~~

1.6.(b) Metric Volumes - 125 milliliters, 250 milliliters, 500 milliliters, 1 liter, or multiples of 1 liter ~~(Effective January 1, 1982)~~

1.7. OTHER MILK PRODUCTS
Delete the parenthetical statement at the end of the subsection.

1.9. PRICING OF BULK FOOD COMMODITIES. --Bulk food commodities or food commodities not in package form and sold by weight shall be priced in terms of whole units of weight and not in common or decimal fractions ~~(Effective January 1, 1977)~~.

3.4. RAILROAD CAR TARE WEIGHTS
Delete Subsection 3.4.4.

202-1 SECTION 1.1. WEIGHT(S) AND (OR) MEASURE(S)

(This Item was adopted as part of the Consent Calendar)

The New Jersey Superintendents Association and the Northeastern Weights and Measures Association recommended that the definition of "weights and measures" in the Uniform Weights and Measures Law be changed to specifically define a scanner or point-of-sale system as under weights and measures jurisdiction.

Several northeastern State representatives said that they had enforcement problems when a scanner or point-of-sale system was being used and when the price marked on an item (or on the shelf) was not the same as the price printed on the receipt. These officials believe that unless the law specifically defines these devices as "weights and measures", they have no jurisdiction over their function.

The Committee respectfully disagrees. The NCWM Uniform Weights and Measures Law already has a section that forbids the practice of a different price on the retail shelf as compared with the price as provided by a scanner. Section 15 of the Uniform Weights and Measures Law reads:

> No person shall misrepresent the price of any commodity or service sold, offered, exposed, or advertised for sale by weight, measure, or count, nor represent the price in any manner calculated or tending to mislead or in any way deceive a person.

This section (plus Section 14 forbidding misrepresentation of quantity), if enacted by a State, already provides enforcement authority over scanners and point-of-sale systems.

In addition, the Committee does not wish to set a precedent by listing by name the types of devices that might be considered weights and measures devices. This might provide a potential "loop-hole" for those devices not specifically listed. Finally, the Committee members want to point out that it is the human element (the person reading in data or receiving price updates) that introduces the discrepancies in shelf and receipt prices rather than any inherent incapability of the reading device or scanner. Therefore, it is much more effective to forbid the practice of mispricing rather than focus on a single device or apparatus as the means for obtaining compliance.

Therefore, the Committee recommends that no change be made to the definition of "weights and measures".

202-2 PROPOSED SECTION 10. REQUIREMENTS FOR TYPE EVALUATION

(This Item was adopted as part of the Consent Calendar.)

In 1983, the NCWM added five new sections to the Uniform Weights and Measures Law to permit adopting by reference the five regulations then recommended by the Conference (Packaging and Labeling, Method of Sale, Unit Pricing, Serviceperson Registration, and Open Dating). That same year (but later in the voting session), the Conference also adopted the Uniform Regulation for National Type Evaluation. The Committee believes this regulation should also be added to the Uniform Weights and Measures Law so that it too may be adopted by reference.

The Committee recommends the following section be added to the Uniform Weights and Measures Law:

SECTION 10. REQUIREMENTS FOR TYPE EVALUATION

The Uniform Regulation for National Type Evaluation as adopted by the National Conference on Weights and Measures and published in the National Bureau of Standards Handbook 130, "Uniform Laws and Regulations" and supplements thereto or revisions thereof, shall apply to type evaluation in the State, except insofar as modified or rejected by regulation.

The footnote that accompanies Section 4 through 9 will be revised to include this Section. It would read:

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[1] **Sections 4 through 9 10 of the Uniform Weights and Measures Law adopt NBS Handbook 44 and regulations in NBS Handbook 130 by citation. In addition, these sections adopt supplements to and revisions of Handbook 44 and the uniform regulations "except insofar as modified or rejected by regulation." Some States may not be able to lawfully enact a statute providing for automatic adoption of future supplements to or revisions of a regulation covered by that statute. If this is determined to be the case in a given State, two alternatives are available:**

(a) Section 4 through 9 10 may be enacted without the phrase "...and supplements thereto or revisions thereof..."

(b) Section 4 through 9 10 may be enacted by replacing "...except insofar as modified or rejected by regulation..." with the phrase "...as adopted, or amended and adopted, by rule of the director."

Either alternative requires action on the part of the director to adopt a current version of Handbook 44 and each uniform regulation each time a supplement is added or revision is made by the National Conference on Weights and Measures.

202-3 SECTION 11.15. USE OF THE TERM "INTRASTATE"

(This Item was carried over from the 69th NCWM, 1984, in which it was Item 201-2.)

(This Item was withdrawn from the Committee's Report, but is repeated below for reference.)

Section 11.15. of the Uniform Weights and Measures Law recognizes reasonable variations caused by loss or gain of moisture "only after the commodity has entered intrastate commerce."

This phrase is not part of the Federal regulations that also recognize such variations. Thus, this section may be considered by some persons to be inconsistent with Federal requirements. The Committee is agreed that there should be no inconsistency between Federal requirements and NCWM recommendations.

The Committee recommends the following revision to the Uniform Weights and Measures Law to achieve the necessary consistency between Federal and State requirements:

> 11.15. Allow reasonable variations from the stated quantity of contents, which shall include those caused by loss or gain of moisture during the course of good distribution practice or by unavoidable deviations in good manufacturing practice ~~only after the commodity has entered intrastate commerce.~~

See Item 204-3 for recommended changes to the Uniform Packaging and Labeling Regulation.

204-1 SECTIONS 6.5.(b), 6.6(b), 7.4(b), and 7.5.(b) — ADD REFERENCE TEMPERATURES FOR ALCOHOLIC BEVERAGES.

(This Item was adopted as part of the Consent Calendar.)

The Southern Weights and Measures Association recommends amendment of these sections to include the reference temperatures for distilled spirits, wine, and malt beverages as specified in the Bureau of Alcohol, Tobacco, and Firearms (Department of Treasury) regulations.

Title 27 of the Code of Federal Regulations, Section 7.10. defines a gallon of 231 cubic inches for malt beverages at 39.1 ^{o}F (4 ^{o}C). Section 5.11. defines a liter for distilled spirits at 60 ^{o}F (15.56 ^{o}C). Section 4.10. defines a liter for wine at 68 ^{o}F (20 ^{o}C).

The Committee recommends the following addition to Section 6.5(b) (Sections 6.6.(b), 7.4.(b), and 7.5.(b) would be patterned accordingly):

> **(b) In units of liquid measure, shall be in terms of the U.S. gallon of 231 cubic inches or liquid quart, liquid pint, or fluid ounce subdivisions of the gallon, and shall express the volume at 68 ^{o}F except in the case of petroleum products and distilled spirits, for which the declaration shall express**

the volume at 60 °F, and except in the case of a commodity that is normally sold while frozen for which the declaration shall express the volume at the frozen temperature, and except in the case of a commodity that is normally sold in the refrigerated state, for which the declaration shall express the volume at 40 °F, and except in the case of malt beverages, for which the declaration shall express the volume at 39.1 °F.

The Committee wishes to point out that there are four sections that are being modified: inch-pound and metric sections for both consumer and non-consumer packages.

204-2 PROPOSED SECTION 10.12. VARIATIONS FROM DECLARED THICKNESS OF POLYETHYLENE PRODUCTS.

(This Item was adopted as part of the Consent Calendar.)

The Uniform Regulation for the Method of Sale of Commodities contains a section on the methods of sale of consumer and nonconsumer polyethylene products, whether sold from bulk or prepackaged. Packaged sheeting, film, and certain types of bags must be labeled by thickness. Checking prepackaged polyethylene products for compliance with the net quantity declarations includes testing the thickness; the procedure for test is provided in NBS Handbook 133.

Similar to tests for labeled weight, length, etc., the average thickness (for a lot, shipment, or delivery of a packaged polyethylene product) must equal or exceed the labeled thickness. Several measurements per package must be made, however, in order to obtain an average thickness per package. Then these individual package thicknesses are averaged in order to obtain the average thickness for the lot, shipment, or delivery.

Industry trade practices have been incorporated into ASTM Standard D-4397-84 "Specification for Polyethylene Sheeting for Construction, Industrial and Agriculture Applications". This standard permits any individual thickness measurement of polyethylene to be as much as 20 percent below the labeled thickness. This standard does not address how far the average thickness of any single package might vary from the label. The first and second editions of NBS Handbook 133 uses 7 percent as the amount for an individual package to vary from the label. The Committee has been asked to incorporate these figures into the Uniform Packaging and Labeling Regulation similar to the special variations for textiles and bark mulch.

This proposal is not a tolerance. The average thickness for the lot, shipment, or delivery must still equal or exceed the label. Just as test methods for packaged meat labeled "1 lb" would permit some packages to be less than 1 lb as long as others in the same lot, shipment, or delivery compensated for any short weight packages, the average principle applies to packaged polyethylene products too. These figures are special individual measurement and individual package variations. Since all other special variations are referenced in the Uniform Packaging and Labeling Regulation, it is appropriate that these variations also be cited.

The Committee recommends the following new section:

10.12. VARIATIONS FROM DECLARED THICKNESS

Any individual thickness measurement of polyethylene sheeting, film, or bag may be as much as 20 percent below the labeled thickness (i.e., at least 80 percent of the labeled thickness).[1]

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

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1 **ASTM Standard D-4397-84, "Specification for Polyethylene Sheeting for Construction, Industrial and Agricultural Applications", 1984.**

204-3 SECTION 12.1.2. VARIATIONS RESULTING FROM EXPOSURE

(This Item was carried over from the 69th NCWM, 1984, in which it was Item 201-2.)

(This Item was withdrawn from the Committee's Calendar but is repeated below for reference.)

Section 12.1.2. of the Uniform Packaging and Labeling Regulation permits variations caused by exposure (also known as "moisture loss variation") "only after the commodity is introduced into intrastate commerce..." A proviso in this section defines the phrase "introduced into intrastate commerce."

This phrase is not part of Federal regulations that also recognize moisture loss. Thus, this section may be considered by some to be inconsistent with Federal requirements. The Committee is agreed that there should be no inconsistency between Federal requirements and NCWM recommendations.

The Committee recommends the following revision of the Uniform Packaging and Labeling Regulation:

12.1.2. VARIATIONS RESULTING FROM EXPOSURE. — Variations from the declared weight or measure shall be permitted when caused by ordinary and customary exposure to conditions that normally occur in good distribution practice and that unavoidably result in change of weight or measure~~, but only after the commodity is introduced into intrastate commerce. Provided,~~ that the phrase "~~introduced into intrastate commerce~~" as used ~~in this~~ paragraph ~~shall~~ be ~~construed to define the time and the place at which the first sale and delivery of a package is made within the State, the delivery being either:~~

~~(a) directly to the purchaser or to his agent, or~~

~~(b) to a common carrier for shipment to the purchaser, and this paragraph shall be construed as requiring that, so long as a shipment, delivery, or lot of packages of a particular commodity remains in the possession or under the control of the packager or the person who introduces the package into intrastate commerce, exposure variations shall not be permitted.~~

There was some concern expressed by Conference members last year, that deleting the above language from Section 12.1.2. would eliminate State power to take action on packaged goods susceptible to moisture loss by tracing the product back to the point of entry into the State and checking it there. It is the opinion of the Committee that this is a dubious enforcement technique if the point of entry into the State is far removed in time from when the product was packaged. The Committee on Laws and Regulations is encouraged with the progress of the Task Force on Commodity Requirements, specifically charged with resolving the moisture loss issue. The Committee recommends that Conference members focus on the Task Force's activities and provide feedback on their reports so that workable enforcement techniques can be developed for products subject to moisture loss.

205-1 SECTION 1.3. BUTTER, OLEOMARGARINE, AND MARGARINE: MARGARINE-LIKE "SPREADS"

(This Item was adopted as part of the Consent Calendar.)

"Margarine" is specifically defined by Federal regulation as containing a minimum of 80 percent fat. There are products that look and taste like margarine, but are lower in fat than the required 80 percent. These products are called "spreads" by the trade. They are packaged like many margarines in plastic "tubs" or bowls and are displayed in supermarkets along with margarine. "Spreads" are not "imitation margarines" because they are not nutritionally inferior to margarine. Section 1.3. of the Uniform Method of Sale Regulation applies only to butter and margarine, not to "spreads".

It has been recommended that Section 1.3. be broadened to include "spread". The National Association of Margarine Manufacturers (NAMM) opposes this recommendation because they contend that there has as yet been no confusing proliferation of "spread" package sizes. There are, however, both 12- and 24-oz packages in the market, and neither size would be permitted if Section 1.3. did apply to "spreads". Some weights and measures officials contend that spread package sizes are confused with margarine packages because the physical dimensions of 12-oz packages are fairly similar to margarine 1 lb packages. It could be argued that unit pricing has reduced the need for package size limitations as provided in method of sale regulations. Unfortunately, unit pricing is not universal in any jurisdiction and States perceive a continuing need for reducing the proliferation of package sizes especially in those products generally regarded as "staples" of the home food budget - milk, bread, butter, and related commodities.

The NAMM also claims that the Federal Fair Packaging and Labeling Act (FPLA) pre-empts the States from restricting package sizes because this Act

gave authority to the U.S. Secretary of Commerce to establish voluntary package size standards. The Committee is advised that the FPLA does not pre-empt the States from regulation as long as such regulations are at least as stringent as and consistent with Federal requirements. It might be argued that one reason package size standards have not been deemed necessary at the Federal level is that the States are already effectively controlling package size proliferation by their laws and regulations.

The Committee believes that 12- and 24-oz sizes of "spread" are already a proliferation of sizes of a commodity that is practically identical in use, appearance, and taste to margarine. The Committee members agree that if there exists sufficient reason to retain package size limitations for butter and margarine, the limitations should also apply to "spreads".

Therefore, the Committee recommends that Section 1.3. be revised to include "spreads":

> **1.3. BUTTER, OLEOMARGARINE, AND MARGARINE, AND MARGARINE-LIKE SPREADS. — Shall be offered and exposed for sale and sold by weight per subsection 1.3(a) or subsection 1.3(b).**
>
> **(a) Inch-Pound Weights - 1/4 pound, 1/2 pound, 1 pound, or a multiple of 1 pound.**
>
> **(b) Metric Weights - 125 grams, 250 grams, 500 grams, or a multiple of 500 grams.**
>
> **"Margarine-like spreads" are those products that meet the Federal Standard of Identity for margarine and oleomargarine except that they contain less than 80 percent fat.**

205-2(a) SECTION 1.5. MEAT, POULTRY, AND SEAFOOD

(This item was carried over from the 69th NCWM, 1984, in which it was item 204-1)

(This Item was adopted as part of the Consent Calendar.)

Last year, the Committee provided the Conference a draft of proposed modifications to the Uniform Method of Sale Regulation that was intended to:

1. Clarify the methods of sale for ready-to-eat food, whether or not the food be composed of meat, poultry, or seafood,

2. Permit ready-to-eat chicken parts to be sold by count so as to allow supermarkets and convenience stores to compete with "fast food carry-out" stores, and

3. Broaden the section on meat, poultry, and seafood to include fresh-water fish.

Considering the entire issue as discussed last year, the proposed revisions to Section 1.5. are as follows:

1.5. MEAT, POULTRY, FISH, AND SEAFOOD[1]— Shall be sold by weight, except that shellfish ~~the following, which~~ may be sold by weight, measure, and/or count~~:~~.

~~(a) shellfish;~~

~~(b) items sold for consumption on the premises;~~

~~(c) items sold as one of several elements comprising a ready to eat meal sold as a unit for consumption elsewhere than on the premises where sold;~~

~~(d) items sold as part of a sandwich.~~

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.

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 product and the minimum net weight of the fish, seafood, poultry, or meat in the product excluding the fish, seafood, poultry, or meat that may be part of the stuffing.

Add the following footnote:

---

[1] See Section 1.12. for additional requirements for ready-to-eat food.

Add the following new section:

1.12. READY-TO-EAT FOOD. - The following may be sold by weight, measure, or count:

(a) items sold for consumption on the premises;

(b) items sold as one of three or more different elements, excluding condiments, comprising a ready-to-eat meal sold as a unit, for consumption elsewhere than on the premises where sold;

(c) ready-to-eat chicken parts cooked on the premises but not packaged in advance of sale;

(d) sandwiches when offered or exposed for sale on the premises where packed or produced and not intended for resale.

205-2(b) PROPOSED SECTION 1.5.3. CLAMS, MUSSELS, AND OYSTERS

(This is an Information Item)

At the 1985 Interim Meeting, the Committee decided to add NCWM guidelines adopted in 1983 on clams, mussels, and oysters (see item 207-3 from that year), to the method of sale of meat, poultry, fish, and seafood. In its 1983 report, the Committee followed advice received by letter from the Food and Drug Administration (FDA). FDA recommended the sale of whole clams, oysters, or mussels, in the shell by dry measure, or by count and size. The Committee received quite a bit of comment by letter from wholesalers, retailers, and buyers of whole shellfish. The majority of commenters favored the addition of weight or weight plus count as an appropriate method of sale of whole clams, mussels, and oysters still in the shell. The Committee decided to add these as methods of sale.

Another problem encountered by weights and measures officials has been the addition of water to fresh oysters out of the shell and sold by liquid volume. The Committee has studied the requirements of several States and of FDA, and recommendations from members of the Interstate Shellfish Sanitation Conference. It appears feasible to set a limit of 15 percent free liquid for fresh oysters, clams, and mussels removed from the shell and sold by fluid volume. This would require that a lot of one-quart (32 fl oz) jars of oysters, for example, when tested at retail contain on the average no more than 4.8 fl oz of liquid.

The Committee plans to add the following new subsection:

1.5.3. CLAMS, MUSSELS, AND OYSTERS

1.5.3.1. Processed or stuffed clams, mussels, or oysters on the half shell shall be sold by net weight excluding the weight of the shell.

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

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 volume is permitted.

1.5.3.4. Frozen oysters, clams, or mussels shall be sold by net weight excluding the weight of the shell.

1.5.3.5. Whole clams, oysters, or mussels in the shell (fresh or frozen) shall be sold by weight, dry measure (e.g., bushel), and/or count. Size designations along with the above measures are also appropriate.

The Committee would like to alert the industry that if a 15% free liquid maximum for fresh oysters is not feasible, then a declaration on the package of the amount of free liquid in the package is being considered. The Committee will carry this item over for further study.

205-3 SECTION 1.7.1. PACKAGED ICE CREAM AND SIMILAR FROZEN PRODUCTS.

(This Item was adopted as a part of the Consent Calendar.)

The current wording of this section might be interpreted as covering only factory-packaged products, not hand-packed ice cream. The Committee recommends the following revision so that hand-packed products are also required to be sold by fluid volume:

1.7.1. FACTORY PACKAGED AND HAND-PACKED ~~PREPACKAGED~~ ICE CREAM AND SIMILAR FROZEN PRODUCTS. - Ice cream, ice milk, frozen yogurt, and similar products shall be ~~packaged for sale~~ kept, offered, exposed for sale, or sold in terms of fluid ~~measure~~ volume.

205-4 PROPOSED SECTION 1.7.1.1. ICE CREAM AND FROZEN DESSERT NOVELTIES

(This Item was carried over from the 69th NCWM, 1984, in which it was Item 204-2.)

(A motion was made to amend this item to propose the method of sale of frozen dessert novelties by net weight. The vote to debate the motion was defeated. The item as originally reported by the Committee was then defeated.)

Products such as prepackaged ice cream sandwiches, chocolate-coated ice-milk cones rolled in nuts or cookie crumbs, frozen coated sherbet or yogurt pops are presently labeled with separate declarations for the ice-cream or ice-cream-like portion (fluid volume) and for the cookie and other coatings (count "two cookies" - or declaration of presence - "plus chocolate coating"). Last year, the Committee was informed that it was not possible to obtain repeatable results when the ice cream was separated from the other ingredients in order to determine the fluid volume of the ice cream portion.

There exists a long-standing consumer usage and trade custom of selling ice cream by fluid volume. Most States have regulations requiring ice cream to be sold by fluid volume. When other ingredients such as cookies or coatings are closely associated with the ice cream in frozen novelty desserts, questions arise of (1) proper labeling of these other ingredients, and (2) how

to test such products for compliance. Many weights and measures officials would like to see a net weight rather than fluid volume declaration on such packages. The Committee, however, is not persuaded that net weight should be required merely for the convenience of the inspector for checking purposes. Although this approach would simplify testing the product, it would not do much to inform the consumer: a 3 fl oz ice cream sandwich can vary in weight from 2.3 to 2.6 oz for a single manufacturer, and a 3 fl oz sandwich might average 1.75 oz in weight, whereas a 3 fl oz fruit pop, identical in size, might weigh 3.3 oz.

The International Association of Ice Cream Manufacturers has worked closely with Weights and Measures officials and the NCWM to address this issue and has proposed a different approach. These frozen desserts can be labeled by total fluid volume. Such declarations more nearly correspond to quantity declarations consumers use in value comparison -the serving size - and, in addition, can be tested by weights and measures officials.

The test would require the determination of the total fluid volume displaced by a frozen dessert novelty. The product volume, together with the product weight, could be used to check frozen novelties by weight, similar to the method used to test milk by weight. Recent studies of the test procedure by the State of West Virginia have shown that a volume displacement method using ice water (rather than kerosene) works very well.

The Committee members believe that a test method is now available that makes testing these products by weight feasible even if they are labeled by total volume. Therefore, the Committee recommends a method of sale by total fluid volume and incorporation of the test method below in subsequent editions of NBS Handbook 133.

The proposed addition to the Uniform Method of Sale of Commodities Regulation is:

1.7.1.1. ICE CREAM AND FROZEN DESSERT NOVELTIES

Frozen dessert novelties containing ice cream, ice milk, frozen yogurt, sherbets, ices, and similar products shall be kept, offered, exposed for sale, or sold by total fluid volume.

The test method for such products is proposed as follows:

(This method was provided by Mr. Karl Angell, Jr., West Virginia Weights and Measures.)

Equipment

Displacement Jar - This is a container large enough to hold ice cream novelty submerged in ice water, for example 12 in high, 6 in diameter, with overflow tube attached to jar one to two inches from top edge at a downward angle of about 45^{o}. This container will have to be constructed of glass or metal.

4-fl oz graduated cylinder - to measure the displaced volume of the novelty

Thermometer - to read the ice water temperature

Package checking scale - to weigh the novelty

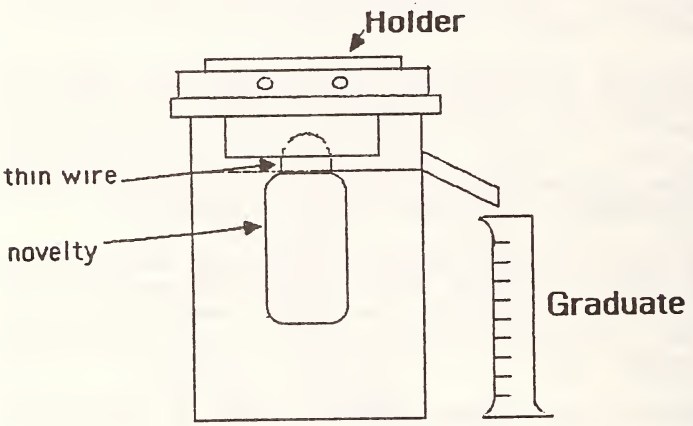
Foam box - large enough to hold displacement jar and some ice around the jar

Stop watch - to time the test

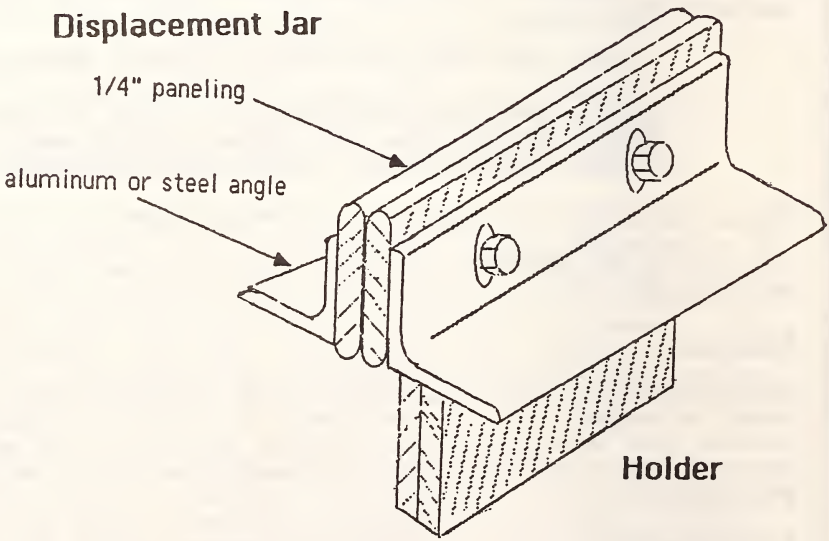
Mesh scoop - to remove any material from the water between tests

Holder - to hold novelty being tested in the ice water to avoid movement

Freezer or ice chest with dry ice - to keep novelty at -10 ^{o}F.



Displacement Jar



1. Keep novelties as cold as possible prior to test (-10 $\pm$ 2 ^{o}F)

2. As quickly as possible, gross weigh two novelty items from the same lot and return to the freezer.

3. Place displacement jar in foam box and pack it in ice. Add ice water (maintained at 33 ^{o}F) to jar until overflow occurs, very slowly adding the water as the water level approaches overflow tube.

4. Using stopwatch, determine when 10 seconds pass between drips from the overflow tube. The displacement jar is now ready to use. Place empty graduate at overflow tube.

5. Take first novelty from freezer, unwrap and fit into holding device. A wire may be needed to attach a sandwich or cone to the holder. Slowly submerge novelty into ice water.

6. Using stopwatch, when ten seconds pass between drips, read graduate volume. This is the total volume of the piece.

7. Weigh all wrappers, sticks, etc. as tare. Subtract tare weight from gross weight to determine net weight.

$$\text{weight of labeled volume} = \frac{\text{actual piece net weight (step 7)} \times \text{labeled volume}}{\text{displaced volume (step 6)}}$$

8. Test two pieces from the inspection lot to determine the average weight of the labeled volume.

9. Use this average weight plus the average tare weight as the weight to check against the other novelties in this lot. No further volume displacement determinations should be needed. (Do note, however, that mixed fruit flavors may weigh differently so that different weights must be determined for different flavors.)

205-5 SECTION 1.11. SALE OF MEAT BY CARCASS, SIDE, OR PRIMAL CUT

(This Item was adopted as part of the Consent Calendar.)

The Southern Weights and Measures Association has proposed a revision of Section 1.11. to provide better safeguards to the purchaser of meat from bulk. The existing requirements have been modified to help purchasers understand more explicitly the value of what they are buying, to help weights and measures officials verify the purchase, and to indicate that there must be two documents: (1) a contract prior to delivery (with the usual right of contract cancellation) and (2) a delivery receipt. The American Association of Meat Processors (representing 1700 companies) has endorsed the proposal. **The Committee recommends the following revision:**

1.11. SALE OF MEAT BY CARCASS, SIDE, OR PRIMAL CUT.—

~~At the time of delivery of bulk meat to the purchaser, t~~The seller of a carcass, side, quarter, or primal cut on a hanging weight basis shall provide to the buyer a written statement giving the following information at the times indicated:

1.11.1. PRIOR TO DELIVERY

(a) The name and address of the seller (firm).

(b) The date of the ~~sale~~ contract.

(c) The name and address of the ~~purchaser~~ buyer.

(d) ~~(g)~~ The total (hanging) weight of the carcass, side, or primal cut prior to cutting or processing.~~The identity in the most decriptive terms commercially practicable.~~

(e) The USDA quality grade and yield grade of the meat to be supplied if so represented.

(f) The price per pound for each species (not including any inducements) ~~before cutting and wrapping~~ and the total price of the sale order.

(h) ~~The total net weight of the cut and processed meat delivered to the purchaser.~~

(g) The estimated cutting loss on the order in terms of percentage and weight (e.g., "40 percent, 160 lb")

(h) ~~(i)~~ A list by name and estimated count of each ~~all~~ cut ~~delivered~~ to be derived from each primal source.

(i) ~~(j)~~ ~~An itemized list of any and all charges over and above the original sale price of the carcass, side, or primal cut.~~ Additional costs, listed separately, for cutting, wrapping, freezing, and finance charges, if any; and

(j) That the buyer may keep the cutting loss.

1.11.2. AT THE TIME OF DELIVERY

(a) The name and address of the buyer and seller.

(b) The date of delivery.

(c) The total net weight of the meat delivered.

(d) A list, by name and count, of each cut derived from each primal cut; and

(e) ~~(k)~~ A separate indication of the quantity of any meat or other commodity(s) received by the purchaser as an inducement in connection with the purchase of the carcass, side, or primal cut.

1.11.3. EXEMPTIONS. — Section 1.11. shall not apply to the sale of any carcass, side, quarter, or primal cut of meat that individually or collectively has a hanging weight of fifty pounds or less.

1.11.4. RIGHT OF CANCELLATION. — The buyer shall have the right to cancel any carcass, side, quarter, or primal cut meat contract until midnight of the third business day after the day on which the buyer executed the contract or after the day on which the seller provided the buyer with a fully executed copy of the contract, whichever is later.

205-6 SECTION 2.19. GASOLINE-ALCOHOL BLENDS

(This Item was adopted as part of the Consent Calendar.)

Last year, the NCWM adopted a new section on gasoline-alcohol blends requiring disclosure on the dispenser of the presence (but not the amount) of methanol or ethanol in gasoline. This section also would require documentation so that anyone in the marketing chain would know of the presence and amount of any oxygenate. This is important information, not only for retailers, who must announce on the pump the presence of ethanol or methanol, but also for blenders, who must know of the presence and amount of any oxygenate in the fuel before blending.

Based on discussions during the Interim Meeting with representatives of the oil industry and with the Task Force on Motor Fuels, the Committee believes that some modifications are needed to this section.

Much of the gasoline transferred through the Nation's pipelines may already contain significant amounts of oxygenates (but not ethanol or methanol). These other oxygenates have a long history of successful blending into gasoline and shipping through the pipelines. As Subsection 2.19.2. is now worded, it would be necessary for each marketer in the wholesale distribution chain to determine the amount and presence of these other

oxygenates in order to provide the documentation required in wholesale transactions. This would be an unnecessary burden for any marketer without ethanol or methanol in his gasoline and no plans to blend ethanol or methanol into it.

The Committee members believe that it should be the responsibility of the person who plans to blend ethanol or methanol into gasoline to specify when purchasing, or determine after receiving, whether the base gasoline permits ethanol or methanol to be added.

The Committee encourages declaration of the maximum amount of ethanol, methanol, or combination (by such words as "not more than % by volume") either voluntarily by gasoline marketers or by regulation in those few States that have the capability to enforce such requirements.

However, the Committee has recommended and continues to support minimum dispenser labeling requirements, so that at least the presence of ethanol or methanol should be disclosed.

In light of these minimum labeling requirements, the Committee recommends no change to Section 2.19.1., and the following revision to Section 2.19.2.:

2.19.2. **DOCUMENTATION ~~IN WHOLESALE TRANSACTIONS.~~ FOR PUMP LABELING PURPOSES. The retailer must be provided at the time of delivery of fuel, on the invoice, bill of lading, shipping paper, or other documentation, the presence and maximum amount of ~~oxygenates~~ ethanol, methanol, or any combination of ethanol/methanol (in terms of percent by ~~weight~~ volume) contained in the fuel. ~~Provide that the term "oxygenates" means any oxygen-containing compound (such as an alcohol or an ether).~~ This documentation is only for pump labeling purposes; it is the responsibility of any potential blender to determine the total oxygen content of the motor fuel before blending.**

205-7 PROPOSED SECTION 2.20. LIQUIFIED PETROLEUM GAS

(This is an Information Item.)

A symposium on temperature compensation for petroleum products was held after the voting session of the 69th NCWM on August 2, 1984. A questionnaire was circulated at the conclusion of that seminar. Only nineteen responses were received. Because of the poor response level, the Committee does not believe that the results of the questionnaire can be used to guide it in other than very general terms towards recommendations for the NCWM. The Committee does believe, however, that there is some indication that the Conference membership would agree that a reference temperature does need to be specified in law or regulation for the volume measurement of LP gas:

Its volume is much more susceptible to change with temperature than other liquid petroleum products.

It is routinely sold in many jurisdictions on a temperature compensated basis at the present time.

The Committee was planning to recommend the following new section:

2.20. LIQUIFIED PETROLEUM GAS - All LP gas shall be kept, offered, exposed for sale, or sold in terms of the gallon defined as 231 cubic inches at 60 °F except for unit sales directly to mobile fuel tanks of less than 100 gallons. All retail sales shall be accomplished by use of a meter that automatically compensates for temperature.

Because of all the information supplied and questions raised from various regulatory jurisdictions and industry about the method of sale of LP gas, the Committee feels that further study is needed.

The Committee wants to reaffirm its position that LP gas should be sold on a temperature-compensated basis. However, the Committee recommends that this item should be carried over.

On the subject of LP gas, the Southern Weights and Measures Association requested assistance in determining the source of discrepancies between retail and wholesale receipts found by several LP gas retailers in the central States. During the Interim Meeting, the Committee heard from representatives of the Gas Processors Association, National LP-Gas Association, American Petroleum Institute, a meter manufacturer, and a recorded message from a midwest retailer. Temperature compensated LP gas meters are adjusted to automatically compensate for an LP gas of a given specific gravity. As the LP gas, which is a mixture of propane and other easily liquifiable hydrocarbons, varies farther from the specific gravity for which the meter is set, the errors of volume measurement increase. The National LP-Gas Association, together with the other trade associations present at the Interim Meetings, agreed to conduct a meeting in April, 1985, with retailers, weights and measures officials, and meter manufacturer representatives to determine the source or sources and magnitude of the discrepancies, their economic impact, and potential solution. The National LP-Gas Association reported the status of this issue in a letter to the Committee in July 1985. The Committee will continue to monitor the progress of this issue and will study the need to post the specific gravity of LP gas at its next Interim Meeting.

205-8 PROPOSED SECTION 2.21. BORAX

(This is an Information Item.)

Consumer laundry additives consisting of borax are presently labeled by weight. Borax is somewhat unusual in that it can lose more than 23 percent of its weight due to moisture loss but loses neither its laundry additive properties nor its volume.

Moisture loss is permitted by Federal and State regulations, but the amount of weight loss can be extreme for predominantly borax products. Representatives from the U.S. Borax and Chemical Corporation have worked with the Liaison Committee and the State of West Virginia to develop a compliance testing method that depends on volume rather than weight.

The Committee on Laws and Regulations met with U.S. Borax representatives and Mr. Earl Johnson of the Federal Trade Commission (FTC) to resolve the issue of appropriate net contents labeling. It is the opinion of the Committee that:

> The consumer uses the product by "cupfuls" (by volume)
>
> The consumer will not be thwarted in value comparisons if this product is labeled by volume when other products are labeled by weight. Other laundry products, for example softeners, are labeled by weight, volume, or sheet count and do not appear to confuse the purchaser.

It is the opinion of the Committee that products containing predominantly borax should be labeled by volume. This opinion and a request for FTC's response prior to the Annual Meeting has been transmitted to the Federal Trade Commission.

The Committee was planning to recommend the following new section:

> 2.21. BORAX. — Consumer products composed predominantly (greater than 50%) of borax shall be kept, offered, exposed for sale, or sold by volume in cubic inches or milliliters.

This item will be carried over for further study and information since the Federal Trade Commission has indicated it cannot support the Committee's recommendation for the labeling of borax by volume.

208-1 REVISION OF THE UNIFORM OPEN DATING REGULATION

(This item was carried over from the 69th NCWM, 1984, in which it was Item 206.)

(This item was adopted as part of the Consent Calendar.)

Dr. Edward Heffron, Chief of the Food Division for the Michigan Department of Agriculture, while he was chairman of the Committee on Laws and Regulations for the Association of Food and Drug Officials (AFDO), proposed to the NCWM that the Uniform Open Dating Regulation be reviewed in light of AFDO's "Uniform State Open Dating Bill." A single recommendation from both organizations would lead to greater uniformity when States or local jurisdictions look for guidance on proposed regulatory standards to adopt. Last year, the NCWM Committee on Laws and Regulations published as part of its report a proposed revision to the NCWM Uniform Open Dating Regulation, and transmitted that proposal to AFDO in order to resolve any differences.

The Committee believes these differences have been resolved and is prepared to now propose the revised regulation to the Conference. AFDO adopted the revised regulation in June 1985.

One very significant change is being proposed that should go far towards making the regulation useful to States and jurisdictions that have not yet regulated in this area: One of two versions would require open dating on perishable foods. The other version would give the option of voluntarily open dating such foods provided that the open dating conforms to the uniform regulation. Therefore, note that Sections 1.1., and 3.1. are footnoted to indicate the alternative wording for the Uniform Open Dating "Voluntary" Regulation.

The proposed revision is as follows:

UNIFORM OPEN DATING REGULATION*

SECTION 1. PURPOSE, SCOPE, AND APPLICATION

1.1. PURPOSE.* The purpose of this regulation is to prescribe mandatory uniform date labeling of prepackaged, perishable foods. Open dating is intended for use and understanding by both distributors and consumers when judging food qualities.

1.2. SCOPE AND APPLICATION. This regulation prescribes the manner of date labeling, the method of determining the appropriate date, required records, responsible persons, and the foods subject to this regulation. This regulation provides for the permissible sale of a regulated food after the expiration of the date on the label. This regulation does not apply to any food that is not prepackaged or is exempted by Section 8.

SECTION 2. DEFINITIONS

2.1. "SELL BY" DATE. — " 'Sell by' date" means a recommended last date of sale that permits a subsequent period before deterioration of qualities described in 2.2., 2.3., and 2.4.

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* Alternatively, this regulation may be adopted to require uniformity of open dating perishable foods whenever a packager voluntarily elects to use date labeling. In such instance, Section 1.1. is to be reworded in the following manner:

1.1. PURPOSE. The purpose of this regulation is to prescribe uniform date labeling that must be used whenever a packager elects to use date labeling of prepackaged foods. Open date labeling is intended for use and understanding by both distributors and consumers when judging food qualities.

2.2. PERISHABLE FOOD. — "Perishable food" means any food having a significant risk of spoilage, loss of value, or loss of palatability within 60 days of the date of packaging.

2.3. SEMI-PERISHABLE FOOD. — "Semi-perishable food" means any food having a significant risk of spoilage, loss of value, or loss of palatability during the period 60 days to 6 months after the date of packaging.

2.4. LONG SHELF-LIFE FOOD. — "Long shelf-life food" means any food in which a significant risk of spoilage, loss of value, or loss of palatability would not occur sooner than 6 months after the date of packaging including foods preserved by freezing, dehydrating, or being in a hermetically sealed container.

2.5. PREPACKAGED. — "Prepackaged" means packaged prior to being displayed or offered for retail sale.

2.6. "BEST IF USED BY" DATE. — "Best if used by" date means a date prior to deterioration of qualities described in 2.3. and 2.4.

2.7. PERSON. — "Person" means an individual, partnership, association, or corporation.

SECTION 3. SALE OF PERISHABLE FOOD AND DATE DETERMINATION.

3.1. "SELL BY" DATE.* — A retail food establishment shall not sell or offer for sale a prepackaged perishable food unless it is identified with a "sell by" date as prescribed by this regulation.

3.2. SALE AFTER EXPIRATION OF "SELL BY" DATE. —

3.2.1. ADVERTISEMENT. — Perishable food shall not be offered for sale after the "sell by" date unless it is wholesome and advertised in a conspicuous manner as being offered for sale after the recommended last date of sale. The placement of a sign, sticker, or tag is acceptable for such advertising if it is easily readable and clearly identifies the perishable food as having passed the recommended last date of sale.

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* Alternatively, this regulation may be adopted to require uniformity of open dating perishable foods whenever a packager voluntarily elects to use date labeling. In such instance, Section 3.1. is to be reworded in the following manner:

3.1. "SELL BY" DATE. If a retail food establishment elects to sell or offer for sale a prepackaged perishable food identified with a "sell by" date, the "sell by" date used must be as prescribed by this regulation.

3.2.2. RESPONSIBILITY FOR ADVERTISEMENT. — The retailer or final seller is responsible for the advertisement, described in 3.2.1., of a perishable food offered for sale after the recommended last date of sale.

3.3. DETERMINATION OF "SELL BY" DATE. —

3.3.1. REASONABLE PERIOD FOR CONSUMPTION. — A manufacturer, processor, packer, repacker, retailer, or other person who prepackages perishable food, shall determine a date that allows a reasonable period after sale, for consumption of the food, without physical spoilage, loss of value, or loss of palatability. A reasonable period for consumption shall consist of at least one third of the approximate total shelf life of the perishable food.

3.3.2. RESPONSIBILITY FOR "SELL BY" DATE. — A retailer who purchases prepackaged perishable food may upon written agreement with the person prepackaging such food determine, identify, and be responsible for the sell by date placed on or attached to each package of such food.

3.4. MANNER OF EXPRESSING DATE. —

3.4.1. MONTH AND DAY, OR DAY OF WEEK. — A person described in section 3.3.1. or 3.3.2. shall place or attach to each package of perishable food a date by month and day. However, bakery products with a shelf-life of not more than 7 days may be dated with the day of the week representing the last recommended day of sale.

3.4.2. THE TERM "SELL BY". — The "sell by" date shall be displayed with the term "sell by" or words of similar import immediately preceding or immediately over the designated date unless a prominent notice is on the label describing the date as a "sell by" date and indicating the location of the date.

3.4.3. ABBREVIATION OF WEEKDAY. — If the day of the week is solely designated as provided in section 3.4.1., the name of the day may be abbreviated by the use of either the first two or first three letters of the name of the day.

3.4.4. EXPRESSION OF MONTH AND DAY. — Except as provided for in section 3.4.1., the date shall be designated by the first three letters of the month followed by a numeral indicating the calendar day or designated by the month represented numerically

followed by a numeral designation of the calendar day. The month and day designation shall be separated by a period, slash, dash, or spacing. When a numeral designation of the first nine days of the month is used, the number shall include a zero as the first digit; for example, 01 or 03.

3.4.5. EXPRESSION OF THE YEAR. — The "sell by" date may include the year following the day if such year is expressed as a two or four digit number separated as described in section 3.4.4.

SECTION 4. SALE OF SEMI-PERISHABLE AND LONG SHELF-LIFE FOOD.

4.1. "BEST IF USED BY" DATE. -- A manufacturer, processor, packer, repacker, or other person who prepackages semi-perishable or long shelf-life food may place upon or attach to the package an open date providing it is designated by the "best if used by" date.

4.2. SALE AFTER EXPIRATION OF "BEST IF USED BY" DATE. — A retail food establishment may sell or offer for sale food beyond the designated "best if used by" date providing the food is wholesome and the sensory physical quality standards for that food have not significantly diminished.

4.3. MANNER OF EXPRESSING DATE. — The "best if used by" date as required by section 4.1. shall be placed upon or attached to each container or package and be limited to the terms "best if used by" or words of similar import followed by or immediately over the date designated by the month and year unless a prominent notice is on the label describing the date as a "best if used by" date and indicating the location of the date. The date shall be designated by the first three letters of the month followed by a numeral indicating the year. The use of the day of the month is permissible providing the day of the month is placed prior to the month; for example, 30 Jun 81.

SECTION 5. PLACEMENT OF THE DATE

The date, whether a "sell by" or "best if used by," shall be printed, stamped, embossed, perforated, or otherwise shown on the package, or on a tag attached to the package in a manner that is easily readable and separate from other information, graphics, or lettering so as to be clearly visible to a prospective purchaser. The date shall not be superimposed on other required information or obscured by other information, graphics, or pricing. Regardless of the type size used, the date shall be easily readable. These requirements do not preclude a supplemental notice elsewhere on a package describing and/or indicating the location of the date.

SECTION 6. FACTORS FOR THE DATE DETERMINATION

A person who, as provided for in this regulation, places either the "sell by" date or "best if used by" date shall determine the date taking into consideration the food quality, characteristics, formulation, processing impact, packaging or container and other protective wrapping or coating, customary transportation, and storage and display conditions. For purposes of calculating this date, home storage conditions shall be considered similar to the usual retail store except that refrigerated food may be calculated using a home storage temperature standard of 40 degrees Fahrenheit (4.4 degrees Celsius).

SECTION 7. RECORDS

A person responsible for establishing the date for perishable, semi-perishable, and long shelf-life food shall keep a record of the method used for the determination of that date. A record revision is necessary whenever a factor affecting date determination is altered. Such record shall be retained for not less than 6 months after the most recent "sell by" or "best if used by" date and be available during normal business hours for examination upon request by (insert agency name).

SECTION 8. EXEMPTIONS

8.1. This regulation does not apply to perishable fruits or vegetables in a container permitting sensory examination.

8.2. This regulation does not apply to prepackaged perishable foods open dated according to requirements of Federal law or regulation.

SECTION 9. PRE-EMPTION OF LOCAL, COUNTY, AND MUNICIPAL ORDINANCE

A municipality or county shall not adopt or impose standards or requirements other than those provided for in this regulation.

SECTION 10. EFFECTIVE DATE

This regulation shall become effective on and after (insert appropriate date).

(END OF OPEN DATING REGULATION)

210-1 CASH/CREDIT SALES AND LABELING OF MOTOR FUEL DISPENSERS

(This is an information Item.)

Since the prohibition against surcharges for the use of credit cards expired in 1984, the Committee decided to revisit the issue of cash discount price posting. Individual weights and measures officials have discussed the advantages of changing pump computers that can't compute both cash and credit from being set on the higher (credit) price to being set on the lower (cash) price in order to make sure "discounts" are never accidentally or deliberately forgotten. In contrast, the Southern Weights and Measures Association recommended that a new section be added to the Uniform Regulation for the Method of Sale of Commodities requiring dispensers to be set on the highest (credit card) price when the dispensers cannot compute both cash and credit card prices. The Association also recommended that cash discount information be displayed on the dispenser itself. The committee has reviewed the guidelines adopted by the Conference in 1982 and clarified in 1983. These guidelines are still applicable to motor fuel cash/credit marketing today. However, the Committee believes that the guidelines should remain "guidelines". The Committee's reasons are as follows:

- It is a national practice to set the dispensers at the credit card price. The Committee cannot see a consensus for changing this practice, although the practice has significant shortcomings.
- Congress may still vote to reinstate the ban on credit card surcharges.
- There is no other common commodity being marketed today with an "add-on price" for credit card use (although this may change in the future).

The Committee believes that there is merit in reprinting the cash/credit guidelines below.

It is important that enforcement agencies overseeing such marketing practices:

- check advertising when testing motor fuel dispensers, and
- do undercover buying to determine if the refund is given as promised.

POLICY AND GUIDELINES ON MOTOR FUEL DELIVERIES (GAS PUMP) PRICE POSTING RELATING TO CASH DISCOUNTS

Discounting for cash transactions is a management decision of the merchandiser. Those merchants who elect to offer cash discounts on motor fuel must comply not only with the Federal Cash Discount Act, but also with the State and local weights and measures laws and regulations. All such laws are intended to prohibit deceptive, misleading, or misrepresentative information to the consumer. The following guidelines are intended to apply to price advertising or posting at the streetside or highway, as well as at the pump, and to the price computed at the dispenser. These guidelines are applicable to other discount offers (such as combination purchases of car wash and gas, for example).

1. If a price is posted or advertised, it must be available to all qualified customers. If any condition or qualification is required to obtain the posted price, that condition must also be posted clearly and understandably in conjunction with the price wherever it is posted.

2. The cash price may be disclosed on the posted or advertising sign by itself as long as the sign clearly indicates that the price is limited to cash purchases and as long as State requirements do not prohibit it.

3. If the merchandiser elects to establish separate pumps or islands for credit card and for cash sales, the pumps or islands shall be clearly identified as "cash" or "credit" to avoid customer confusion.

4. If the merchandiser wishes to offer cash discounts off the credit card price as well as permit credit card sales from a single dispenser not capable of multi-price-computing, the pump shall be set at the higher price and a chart expressed in terms of both the total quantity delivered and the total cash discount applicable (in 1 cent increments) shall be prominently displayed so as to be easily read by the customer at the time of purchase. However, this practice shall have only "interim" status.

5. In order to permit cash and credit card sales from a single dispenser with the minimum amount of customer confusion, the NCWM should adopt a plan and timetable for changeover to devices that can compute and display final money values for either cash or credit card transactions.

(END OF GUIDELINES)

210-2 ADOPTION OF NBS HANDBOOK 133

(This item was carrried over from the 69th NCWM, 1984, in which it was Item 207-1.)

(This is an Information Item.)

The Second Edition of NBS Handbook 133 has been published and distributed to all NCWM members. The Committee heard a report by the Subcommittee on Commodity Standards, chaired by Mr. Don Stagg, at the Interim Meeting and feels confident that the Conference should move ahead to adopt Handbook 133 as its own and manage the revision and updating of this document within the Conference Committee structure. Therefore, the Committee on Laws and Regulations endorses action being recommended by the Executive Committee to adopt Handbook 133. See Item 104-6 of the Executive Committee Report.

The Committee would like to acknowledge the special assistance provided by Mr. A. J. Farrar, NBS Legal Advisor.

E.P. Skluzacek, Minnesota, Chairman

T.F. Brink, Vermont
L. Letey, Colorado
A.M. Nelson, Connecticut
D.E. Stagg, Alabama

C.S. Brickenkamp, NBS, Technical Advisor

THE COMMITTEE ON LAWS AND REGULATIONS

REPORT OF THE COMMITTEE ON SPECIFICATIONS AND TOLERANCES

Darrell A. Guensler, Chairman
Acting Director, Division of Measurement Standards
State of California

REFERENCE KEY

300 INTRODUCTION

The Committee on Specifications and Tolerances submitted its Report to the 70th Annual Meeting of the National Conference on Weights and Measures (NCWM). The report consisted of the Interim Report as offered in the Conference Announcement and as amended by Addendum Sheets developed during the Annual Meeting.

The report contains the recommendations of the Committee formed on the basis of written and oral comments received during the year.

After its individual items were adopted, or in some cases revised or withdrawn, the Report was adopted in its entirety by a hand vote of the membership

All references are to National Bureau of Standards Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices."

Table A lists in numerical order all of the items contained in the report.

The Reference Key numbers and titles of voting items are identified in **bold face print.** All other items are informational only.

Those voting items which were grouped into a "Consent Calendar are indicated by a "C" following the Reference Key Number (e.g., **302-2** C). At the request of the House of State Representatives, one of the 17 items placed on the Consent Calendar, **301-1,** was removed and voted on as a separate item. The Consent Calendar was adopted by unanimous vote.

Table B summarizes the voting results for items voted on individually.

Table A
REFERENCE KEY ITEMS

Reference Key No.	SECTION OF CODE Title of Item
	SECTION 1.14. GENERAL CODE
301-1	**G-S.1. Identification**
301-2 C	**The Indication of Zero on Digital Indicating Elements.**
301-3 C	**Provision for Sealing Adjustable Components.**
301-4	A Mechanism or Technology Referenced.
	SECTION 2.20. SCALES CODE
302-1	**S.1.8.3. Customer's Indications.**
302-2 C	**S.2.3. Tare.**
302-3	**S.6.6. Marking Requirements/Prepackaging Scales.**
302-4 C	**N.1.3. Shift Test.**
302-5 C	**UR.2.5. Access to Pit.**
302-6 C	**Value of the Scale Division, Indicated and Recorded.**
302-7 C	**Definitions.**
302-8	Application of Requirements to Field Examinations or to Type Evaluation.
302-9	**Impact of Influence Factors.**
302-10	**S.6. Marking Requirements.**
302-11	S.6.1. Marking Requirements/Accuracy Class.
302-12	T.N.8. Influence Factors.
302-13	**UR.1.1. Selection Requirements/General - Table 7.**
302-14	**Other Less Substantive or Editorial Changes**
302-15	Weighing-in-Motion Task Force.
302-16	**Report of the National Type Evaluation Technical Committee, Scales and Weighing Systems Sector.**
	SECTION 2.21. BELT CONVEYOR SCALES CODE
303-1	**Code Revision**
	SECTION 2.22. AUTOMATIC BULK WEIGHING SYSTEMS FOR GRAIN CODE
304-1	Federal Grain Inspection Service (FGIS).
304-2 C	**Impact of New Scales Code Format and Tolerances.**
304-3	Application of Code to All Systems.
	SECTION 2.23. WEIGHTS CODE
305-1 C	**T. Tolerances, Table 1.**

Table 1, continued

	SECTION 3.30. LIQUID MEASURING DEVICES CODE
306-1 C	**Agreement Between Indications**
306-2 C	**Recorded Representations, Point of Sale Systems**
306-3 C	**S.2.5. Zero-Set Back Interlock**
306-4	Sec. 3 All Codes Dealing with Liquid-Measuring Devices.
306-5	**Report of the National Type Evaluation Technical Committee, Meters and Measuring Sector**
	SECTION 3.31. VEHICLE TANK METERS CODE
307-1	Split Compartment Tests
307-2	**Agri-Chemical Meters**
307-3	Field Standards
	SECTION 4.43. FARM MILK TANKS CODE
308-1 C	**S.3. Design of Indicating Means**
308-2 C	**Definitions**
	SECTION 5.54. TAXIMETERS CODE
309-1 C	**UR.2. Position and Illumination of A Taximeter**
309-2 C	**Type Evaluation Criteria for Taximeters**

Table B
VOTING RESULTS

Reference Key No.	House of State Representatives		House of Delegates	
	Yes	No	Yes	No
301-1	35	7	46	31
302-1	36	5	44	23
302-3	45	0	78	0
302-9	45	0	60	2
302-10	37	7	64	7
302-13 Original	32	11	30	41
Amended	43	0	67	2
302-14	44	0	70	0
302-16	44	0	70	0
303-1	43	0	69	0
306-5	43	0	70	0
307-2	36	7	60	6

DETAILS OF ALL ITEMS FOLLOW IN NUMERICAL ORDER

Handbook paragraphs to be added or completely revised are so identified. Partial changes to paragraphs are shown as follows: wording to be deleted is shown lined out; wording to be added is underlined.

REFERENCE KEY

SEC. 1.14. GENERAL CODE

301-1 G-S.1. IDENTIFICATION

(This item was adopted)

The Committee received several comments concerning this paragraph. The concerns centered around two areas: one, the location of the required information on devices, and two, the clarity of the paragraph itself.

With respect to the location of the required information the following comments were expressed:

Weighing elements when installed in check-out stands are not under the control of the scale manufacturer and are often recessed in the counter.

The level indicating means are often installed on the device but under the platter. This is appropriate according to Scales Code paragraph S.2.4. Level-Indicating Means, providing the platter can be easily removed without a tool. Why not allow the markings to be in the same location?

There are other devices where the markings are located inside a door of a housing that can be easily opened.

The Committee agrees with these comments and recommends that this paragraph be amended to read:

> G-S.1. Identification. - All equipment except weights shall be clearly and permanently marked for the purposes of identification with the following:
>
> (a) the name, initials, or trademark of the manufacturer or distributor;
>
> (b) a model designation that positively identifies the pattern or design of the device; and
>
> (c) **except for equipment with no moving or electronic component parts, a nonrepetitive serial number (nonretroactive as of January 1, 1968).**

(d) **The serial number shall be prefaced by words, an abbreviation, or a symbol, that clearly identifies the number as the required serial number. (Nonretroactive as of January 1, 1986.)**

The required information shall be so located that it is readily observable without the necessity of the disassembly of a part requiring the use of any means separate from the device.

301-2 THE INDICATION OF ZERO ON DIGITAL INDICATING ELEMENTS.

(This item was adopted as part of the Consent Calendar)

A comment was received that an indication of "zero" on any digital indicator should clearly indicate the status of the device and the value of the division that is displayed. For example, it would be inappropriate to display only one zero (0) if the device was displaying in increments of thousandths (0.001) or tens (10). This is consistent with what has been required in type evaluation examinations for many years. The Committee agrees and recommends that paragraph G-S.5.2.2. Digital Indication and Representation be amended by adding the following nonretroactive clause.

(d) **A digital zero indication includes the display of a zero for all places that are displayed to the right of the decimal point and at least one place to the left. When no decimal values are displayed, a zero shall be displayed for each place of the indicated division.**

301-3 PROVISION FOR SEALING ADJUSTABLE COMPONENTS

(This item was adopted as part of the Consent Calendar)

A comment was received that the principles of the sealing requirement as it appears in the Scales Code paragraph S.1.10, are applicable to equipment in other codes. The Committee agrees and recommends that a new nonretroactive paragraph be added to the General Code to read:

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.

301-4 A MECHANISM OR TECHNOLOGY REFERENCED IN A REQUIREMENT THAT MAY NOT BE UTILIZED IN ALL DEVICES.

(Information Item)

The Committee received two comments that there are requirements that reference a particular mechanism or technology that may not be included in all devices. The concern expressed was that this could be construed to require the particular mechanism or technology referenced. For example,

Scales Code paragraph S.1.1.1. refers to a "center of zero" indicator and paragraph S.1.6.1. refers to a "locking screw" on a poise.

It is the view of the Committee that these paragraphs are clear and that the language used should not be interpreted to require a "center of zero" indicator or a "locking screw on a poise". There is ample evidence of that, since the reference to the locking screw has been in that paragraph for over 40 years and many poises are not equipped with locking screws. Therefore, the Committee recommends no action.

SECTION 2.20. SCALES CODE

All references are to the Scales Code that becomes effective January 1, 1986. The first eight items, that is items 302-1 through 302-8, deal with normal routine issues not related to the transition to the new Scales Code Format and Tolerances. Items 302-9 through 302-14, deal with issues that are a result of this transition.

302-1 S.1.8.3. CUSTOMER'S INDICATIONS.

(This item was adopted)

A comment was received that this paragraph should be amended so that it is consistent with the Uniform Method of Sale of Commodities Regulation paragraph 1.9. which reads,

> "1.9. PRICING OF BULK FOOD COMMODITIES. - Bulk food commodities or food commodities not in package form and sold by weight shall be priced in terms of whole units of weight and not in common or decimal fractions (effective January 1, 1977)."

The areas of particular concern in paragraph S.1.8.3. were the use of the words "multiples" and "pound", the two words that do not appear in paragraph 1.9. It is the view of the Committee that there is no conflict with respect to the word "multiple" since as paragraph 1.9. allows sales in multiples of a unit of weight such as 3 pounds for $1.00, a computing scale could be designed to utilize that method.

With respect to the word "pound", the Committee agrees that there is a conflict. This would seem to preclude "kilogram", for example. Thus the Committee recommends that the last sentence of this paragraph be amended to read:

> "Unit Price displays visible to the customer shall be in terms of whole units of weight and not in common or decimal fractions."

302-2 S.2.3. TARE

(This item was adopted as part of the Consent Calendar)

A comment expressed need for clarification of the intent of the part of this paragraph dealing with devices that automatically clear any tare value or unit price entered. The language seems to preclude the manual clearing of tare. The intent of this part is to limit this technology, insofar as practical, to prevent the facilitation of fraud. For example, if a tare were entered and displayed to the customer and the seller merely touched the platter immediately before placing the commodity to be weighed on the scale, this action would clear the tare and not be apparent to the customer.

The Committee agrees that clarification is necessary and recommends this sentence be amended as follows:

> A device designed to automatically clear any tare value ~~entered, means~~ shall also be ~~provided~~ designed to prevent the automatic clearing of tare until a complete transaction has been indicated.*

302-3 S.6.6. MARKING REQUIREMENTS/PREPACKAGING SCALES.

(This item was adopted)

The Committee received a comment that scales designed for particular applications, such as postal scales, should be marked so that the use for which they are designed is clear to a prospective purchaser. The Committee agrees and recommends that this paragraph be amended to read:

> **S.6.6. SCALES DESIGNED FOR SPECIAL APPLICATIONS.-Any scale that is designed for a special application, such as a prepackaging or postal scale, the design of which is such that it would not be appropriate for general use, shall be conspicuously marked with suitable words, visible to the operator and the customer, defining and restricting use of the scale to the application (Amended and nonretroactive as of January 1, 1986).**

302-4 N.1.3. SHIFT TEST.

(This item was adopted as part of the Consent Calendar)

The Committee received two comments that this part was not clear with respect to shift tests as applied to monorail scales, to axle-load scales, or to livestock scales with more than two sections. The Committee agrees and recommends Code Amendment as follows:

Add a new paragraph to read:

> N.1.3.6. MONORAIL SCALES. - A shift test shall be conducted with a test load equal to the largest load that can be anticipated to be weighed in a given installation, but never less than one-half scale capacity. The load shall be placed successively on the right end, the left end, and the center of the live rail.

Amend the title of paragraph N.1.3.4. to read:

> N.1.3.4. LIVESTOCK SCALES WITH MORE THAN TWO SECTIONS, AND ALL VEHICLE AND AXLE-LOAD SCALES

302-5 UR.2.5. ACCESS TO PIT

(This item was adopted as part of the Consent Calendar)

A comment was received that this paragraph applies to scales with pits and omits any reference to self-contained scales not installed in a pit, or to axle-load scales, or railway track scales. The Committee agrees that this seems to be an oversight and that reference should be made to these devices, and recommends this paragraph be amended to read:

> U.R.2.5. ACCESS TO WEIGHING ELEMENTS.- Adequate provision shall be made for ready access to the pit of a vehicle, livestock, animal, axle-load or railway track scale for the purpose of inspection and maintenance. Any of these scales without a pit shall be installed with adequate means for inspection and maintenance of the weighing elements.

302-6 VALUE OF THE SCALE DIVISION, INDICATED AND RECORDED.

(This item was adopted as part of the Consent Calendar)

A comment was received that it should be made clear that the value of the scale division as recorded should be the same value as indicated. The Committee agrees and recommends amendment as follows:

Add a new nonretroactive User Requirement to read:

> **UR.1.3. - VALUE OF THE INDICATED AND RECORDED SCALE DIVISION. - Except for class I scales, the value of the division as recorded shall be the same as the division value indicated.**

302-7 DEFINITIONS.

(This item was adopted as part of the Consent Calendar)

On the basis of comments received the Committee recommends that the definition section be amended as follows:

Add the following definitions:

scale section. A part of a vehicle, axle-load, livestock, or railway track scale consisting of two main load supports usually transverse to the direction in which the load is applied.

section test. A test in which the test load is applied over individual sections of the scale. This test is conducted to disclose the weighing performance of individual sections, since scale capacity test loads are not always available and loads weighed are not always distributed evenly over all main load supports.

302-8 APPLICATION OF REQUIREMENTS TO FIELD EXAMINATIONS OR TO TYPE EVALUATION.

(Information Item)

Two comments were received on this subject. One suggested that each paragraph in Handbook 44 be marked to identify its application to field examinations or type evaluation examinations. The other was to completely separate the two and include a table listing all the various kinds of scales, then listing all paragraphs that would be applied by the field inspector. Various comments were made by attendees at the interim meeting. Many weights and measures officials expressed the view that although certain paragraphs such as those applying to graduations, indicators, parallax, beams, and poises are design criteria, any of these components are subject to exchange or modification in the field. It was felt that if these paragraphs were marked as applicable to type evaluation examinations, when exchanges or modifications were made in the field they could not be applied in a field examination. Other concerns were also expressed.

It is the view of the Committee that this issue is best resolved by not changing Handbook 44 at the present time, and that the best aids for the field inspector are the Examination Procedure Outlines published by OWM.

New drafts have been completed for almost all types of scales and are serving as the basis for the new training manuals. Further changes will be made consistent with the New Scales Code Format and Tolerances.

302-9 IMPACT OF INFLUENCE FACTORS

(This item was adopted)

A paragraph in parenthesis appears at the beginning of the New Scales Code Format and Tolerances as printed in the 1985 Edition of HB 44. This paragraph was included to clarify the effective dates of the new code on scales depending on the date of manufacture. Concern has been expressed about the capability of verifying that previously approved scales meet the performance requirements imposed by the introduction of the influence factor criteria in the new code.

Compliance with the influence factors can only be verified in an adequately equipped laboratory, and it is anticipated that such tests will identify a need to make changes in many scales. The relatively short period of time remaining before the effective date of the new code (January 1, 1986) appears to be inadequate to provide for all the necessary testing and possible scale modification. The Committee is therefore recommending phasing in the application of the influence factor requirements over a two year period.

An explanation of the impact of the transition to the new code and delaying the influence factors follows.

Marking with class designation

Scales manufactured before January 1, 1986 do not have to be marked with a class designation. All scales manufactured after January 1, 1986 must be marked with the class designation.

Compliance with influence factors

Between January 1, 1986 and January 1, 1988, previously type approved devices must meet the requirements of the new code, except for certain new influence factors; after January 1, 1988, they must meet all requirements of the new code.

Devices type evaluated after January 1, 1986 must meet all requirements of the new code, including the influence factors.

Impact on field official

Due to the phase in, the field official will not know whether or not a device marked with a class designation meets the requirements of the influence factors. This ambiguity will have no impact on the responsibilities of the field official, who is not expected to test for compliance with the influence factors in any case.

Documentation of degree of compliance

Between January 1, 1986 and January 1, 1988, the Certificate of Conformance is the only official record that a device marked with a class designation meets the influence factor criteria.

Committee recommendations

The Committee recommends the following changes in the new code to clarify this modification in the plan for implementation of the new scales code:

Amend the opening paragraph to read:

> (This code will become effective and enforceable January 1, 1986. Scales manufactured after January 1, 1986, must be marked I, II, III, III L, or IIII. See paragraph S.6.1.)

Amend Paragraph T.N.8. Influence factors to read:

> T.N.8. Influence Factors. - The following factors are applicable to tests conducted under controlled conditions only, provided that
>
> (a) types of devices approved prior to January 1, 1986 and manufactured prior to January 1, 1988, need not meet the requirements of this section, and
>
> (b) new types of devices submitted for approval after January 1, 1986 shall comply with the requirements of this section, and
>
> (c) all devices manufactured after January 1, 1988 shall comply with the requirements of this section.

Add the following definitions:

> **type.** - The term "type" shall be construed to mean a model or models of a particular measurement system, instrument, element, or a field standard that positively identifies the design. A specific type may vary in its measurement ranges, size, performance, and operating characteristics.

302-10 S.6. MARKING REQUIREMENTS

(This item was adopted)

A comment was received regarding paragraphs S.6.1., which requires the accuracy class to be marked, and paragraph S.6.5., which requires the temperature limits to be marked under certain conditions. Concern was expressed that both paragraphs specified the required marking to be "on the identification plate", and that either or both of these markings might well be appropriately placed in a suitable location "on the device". The Committee agrees and recommends that in both paragraphs the term "identification plate" be deleted and the word "device" be inserted. The same editorial correction will be made in paragraph T.N.8.1.1.

302-11 S.6.1. MARKING REQUIREMENTS/ACCURACY CLASS.

(Information Item)

The Committee discussed at length the comments received regarding this paragraph. A particular concern had been expressed that a manufacturer of a digital indicator may not be able to determine the particular class of scale with which the indicator would be interfaced in a field application. A dealer could interface a digital indicator with a vehicle scale Class III L or an industrial scale Class III. The question was also asked if a Class II device could be used in a Class III application. The Committee's views on these issues are as follows:

> in most instances, a higher accuracy class scale than that recommended by Table 7 can be used; and
>
> vehicle, axle-load, livestock, and railway track scales are normally Class III L. However, a digital indicator marked Class III could be used on any of those devices, providing the digital indicator had been "type approved" as a Class III.

It must be kept in mind that a special Class III L was included for these scales (vehicle, axle-load, livestock, and railway track) maintaining a relative tolerance, but expressing the tolerance in terms of the scale division. On a Class III L vehicle scale of 120,000 pounds capacity and 20 pound divisions (n=6000), the maintenance tolerance at a capacity load is 240 pounds (the same as presently required). On a Class III scale with the same capacity and scale division, the maintenance tolerance at a capacity load is 100 pounds. Other illustrations are:

Scale Capacity	Scale Division	Maintenance Tolerance at Capacity Load	
		Class IIIL	Class III
100 000 lb	10 lb	200 lb	50 lb
100 000	20	200	100
100 000	50	200	100
100 000	100	200	200
200 000	50	400	150

This table clearly illustrates one of the principles of the new tolerance structure; the number and value of the scale divisions affect the accuracy required of the scale. Obviously this is not true for a Class III L scale. It also illustrates that on a scale with 1000 divisions, the tolerance is the same for Class III as III L. Thus, a livestock scale with 1000 divisions marked Class III would imply that it is a more accurate device than one marked III L when, in fact, it is not.

It is the view of the Committee that, since Class III L was included to deal particularly with vehicle, axle-load, livestock, and railway track scales, the device should be marked III L in these applications. This should not present a problem for manufacturers since most digital indicators are marked with the capacity and scale division at installation; the same can be done with "III L". This decision should lessen confusion in the marketing process.

302-12 T.N.8. INFLUENCE FACTORS.

(This information item was withdrawn from the Committee's report but is repeated below for reference. It was resolved under Item 302-9)

A comment was received that the reference to "type evaluation examinations" in this paragraph should more appropriately be "laboratory tests". It is true that these tests can only be conducted properly in a laboratory, and most likely will be in all instances. It is also true that they apply only to type evaluations, not initial, periodic, or subsequent field examinations. This is further supported by paragraph T.N.2.3. which states that in subsequent examinations the tolerance values apply, regardless of the influence factors in effect at the time of the test. The Committee hopes that this explanation clarifies the issue and recommends no change.

302-13 UR.1.1. SELECTION REQUIREMENTS/GENERAL - TABLE 7

(This item was adopted as amended. See the discussion at the end of the item for the voting sequence)

Several comments and recommendations were received concerning this part of the New Scales Code Format and Tolerances. It is the view of the Committee that this part is perhaps the least understood of all the new material. The Committee hopes that the following explanation and recommendations respond to all the questions and concerns expressed.

One of the basic principles of the new format and tolerances is that, in general, the value of the scale division and the number of divisions of a scale indicate the accuracy of the scale, and that certain weighing applications require more accuracy than others. Thus, the establishment of different accuracy classes.

Economic considerations are and always have been involved in weights and measures decisions. Tolerances have long been established on the basis of the cost of manufacture and maintenance of equipment. Many years ago, the maximum value of the scale division for certain devices or weighing applications was established because of economic impact. Most of these were first set when scale capacities were considerably smaller. For example, when the maximum value of the scale division on livestock scales was specified as 5 pounds, almost all livestock scales were 10 000 pounds capacity or less, hence the number of scale divisions was 2000. The scale division value, 5 pounds, remained constant as the scale capacity and size of the weighments increased, which increased the number of scale divisions without changing the percentage tolerance.

Consequently, when weighing a 20 000-pound load of livestock, the ratio of the load to the scale division becomes 4000:1; the value of the tolerance at that load is 40 pounds, equal to eight scale divisions. The question arises as to the necessity of weighing that load to the closest five pounds when the allowable error is 40 pounds. It seems much more reasonable to set a larger scale division value. Similar illustrations apply to vehicle and railway track scales.

With respect to retail scales, the value of the scale division for scales of 50-pound capacity or less was established many years ago at one ounce. This seemed to be a practical value when weighing bulk commodities, as was most frequently done, in specified amounts of 1, 3, 5, 10, 15, or 20 pounds.

Technology and marketing practices have long since changed, but not the specified division value of one ounce. Device manufacturers and the marketplace have therefore reacted.

The value of the scale division for most retail scales today is 0.01 pound, or even 0.005 pound, as a result of the marketplace, not weights and measures regulation. This seems to be a clear indication that a catalyst for change and an orderly marketplace can result from factors other than regulation. It should also relieve some of the concerns expressed with respect to eliminating the specifying of a maximum value of the scale division.

There is, however, a need to advise the user or purchaser of a device that it is not appropriate to use the same scale to weigh anything from a railroad car to a 100-pound sack of seed corn. This is partially accomplished with the establishment of Table 8, which lists recommended minimum loads to be commercially weighed. These minimum loads are expressed in terms of the scale division (d). For example, the recommended minimum load to be weighed on a Class III scale is 20d.

The following example illustrates the significance of this recommended value. A purveyor of wholesale meat products has purchased a scale with a capacity of 1000 pounds with a 1-pound scale division. The scale is to be used to weigh many different large portions of meat, including individual pork loins. If a pork loin actually weighing 19 1/2 pounds is weighed by a purveyor on his scale (adjusted to zero error), by attempting to weigh to the closest scale division of 1 pound he would most likely arrive at 20 pounds. The resultant error in this weighing process would be 1/2 pound, or 2 1/2 percent of the load. A weights and measures official would probably consider the maintenance tolerance to be 0.1 percent or 1 pound per 1000 pounds on such a scale. The illustrative weighing error is thus 25 times the maintenance tolerance.

Similarly, consider a digital computing scale with 0.01-pound scale divisions. If 0.195 pound of shrimp were weighed, the scale would indicate either 0.19 pound or 0.20 pound, in error by more than 2 1/2 percent. This is the largest error that can result when weighing a load equal to 20 scale divisions. When weighing random loads, the load will not always be equal to 19.5d; some will be 19.6, 19.7, 19.8, or 20.1, 20.2, 20.3, and so on. The closer the actual load is to a whole scale division value, the smaller the relative error.

The recommended minimum load serves as a guide to the purchaser in buying a scale for his weighing needs, to the scale salesperson in recommending the design of a scale to sell, and to the weights and measures official in determining the appropriateness of a scale used in a particular application.

There are other considerations, of course, including the value of the product to be weighed and the time involved in the weighing process. It is expected that the average weighments will exceed 20d by at least five times, resulting in less uncertainty and relatively more accurate weighing.

The new format also responds to these considerations in the establishment of accuracy classes and the tolerances as a function of the scale division. Weights and measures officials have always been concerned in applying General Code, paragraph G-UR.1.1., Suitability of Equipment. This has been a subject of discussion at many Conferences over the years and, more often, at almost any gathering of concerned parties, probably since the beginning of weights and measures. It would be ideal if hard and fast rules could be established, but the same predicament would undoubtedly arise again with new developments in the course of time.

Everyone seems to recognize the difficulty of this task, but the new format appears to provide more guidance than any previous attempts. Thus, the Committee recommends the following:

Change Table 7 to Table 7a as follows to apply to devices marked with a class designation:

Table 7a
TYPICAL CLASS OR TYPE OF DEVICE
FOR WEIGHING APPLICATIONS

Class	Weighing Application or Scale Type
I	Precision laboratory weighing
II	Laboratory weighing, wholesale precious metals & gem weighing, grain test scales
III	All commercial weighing not otherwise specified, retail precious metals & gem weighing, grain test scales
III L	Vehicle, axle-load, livestock & railway track scales
IIII	Highway weight enforcement, wheel-load weighers, and portable axle-load weighers

Add Table 7b as follows to apply to devices not marked with a class designation:

Table 7b
APPLICABLE TO DEVICES NOT MARKED
WITH CLASS DESIGNATION

Scale Type or Design	Maximum Value of d
Retail Foods Scales, 50-lb capacity and less.	1 ounce
Animal Scales.	1 pound
Livestock Scales	5 pounds
Grain Hopper Scales	
Cap. up to and including 50 000 lb	10 pounds (but not greater than 0.05% of capacity)
Cap. over 50,000 lb.	20 pounds
Crane Scales	not greater than 0.2% of capacity
Vehicle and Axle-Load Scales Used in Combination	
Cap. up to and including 200,000 lb.	20 pounds
Cap. over 200,000 lb	50 pounds
Railway Track Scales	
With weighbeam	20 pounds
Automatic indicating	100 pounds
Scales with Capacities greater than 500 lb and not otherwise specified	0.1% capacity (but not greater than 50 lb)
Wheel-Load Weighers	0.25% capacity (but not greater than 50 lb)

Note: For scales not specified in this table paragraphs G-UR.1.1., and UR.1. apply.

Amend paragraph UR.1.1. General to read:

UR.1.1. General. -

(a) for devices marked with a class designation the typical class or type of device for use in particular weighing applications are as shown in Table 7a, and

(b) for devices not marked with a class designation Table 7b applies.

After discussion, Item 302-13 was defeated (State Representatives 32-11; Delegates 30-41). It was brought to the attention of the Conference that as a result of this item being defeated, the Table 7 as it presently appears in H-44 in the New Scales Code Format remains in force, resulting in a conflict between Table 7 and Table 3. In order to resolve the conflict, a motion to suspend the rules of the Conference passed (State Representatives 41-2; Delegates 59-13). A motion to reconsider Item 302-13 passed (State Representatives 42-1; Delegates 59-11). Several recommendations for amendments were made and discussed. A motion was made, seconded, and passed to amend this item as follows:

In Table 7a, under class II delete the word "wholesale" and under Class III, delete the words "retail precious metals and gem weighing".

This admendment was adopted (States Representatives 43-0; Delegates 71-2)

Item 302-13 as amended was adopted (States Representatives 43-0; Delegates 67-2).

302-14 OTHER LESS SUBSTANTIVE OR EDITORIAL CHANGES

(This item was adopted)

T. Tolerances. - For scales not marked I, II, III, III L, or IIII add T.1.3. To Tests Involving Digital Indications or Representations, as it appears in the old code, but renumber T.1.1.2. in new code.

T.1.2. - Add to the end of this paragraph the following sentence:

Paragraphs T.N.2.5., T.N.4., T.N.5., and T.N.7.2. also apply.

T.1.2. Table 5. - This table is appropriate for almost all devices encountered, but is not appropriate when the value of "d" is 1/16 oz (.005 lb) or smaller. Add a new paragraph to read:

T.1.2.1. When the value of "d" is less than 1/16 oz, 0.005 lb, 2 grams, or 35 grains, the maintenance tolerance shall be 0.1% of test load and the acceptance tolerance shall be 0.05% of test load, but never less than one-half "d" or 0.05% (1/2000) of scale capacity, whichever is less.

Amend T.1.1. General by adding to the end of the paragraph the following words:

"for Class III Devices".

Amend Table 5 of T.1.2. so that a further step is added as follows:

Test loads (lb)	Maintenance tolerance		Acceptance tolerance	
	Ounce	Pound	Ounce	Pound
24+ to 30 incl.	1/2	030	1/4	015
over 30	0.1% of Test Load		0.05% of Test Load	

Add a paragraph to read:

T.1.1.3. Minimum Tolerance. - When not otherwise specified the minimum tolerance to be applied shall be 0.05% (1/2000) of scale capacity or one-half "d", whichever is less.

Amend "T.N.2.5. Ratio Tests" by deleting the words "values specified in table 6" and insert the words "applicable tolerances".

Amend "T.N.8.4. Barometric Pressure" by adding an exception for Class I scales.

Under "UR.3.1. Minimum Load" change all references to "Recommended Minimum Load".

A comment was received that in order to reduce the uncertainty in determining the quantity of foreign material (dockage) in a sample of grain, a minimum weight of the sample size, and a minimum load to be weighed, expressed in scale division values (d), should be specified. The Committee agrees and recommends the Code be amended by adding the following new paragraph.

UR.3.1.1. MINIMUM LOAD/GRAIN DOCKAGE DETERMINATION. - When determining the quantity of foreign material (dockage) in grain, the weight of the sample shall be equal to or greater than 500 scale divisions.

302-15 WEIGHING-IN-MOTION TASK FORCE

(Information item)

In its report to the 69th Conference (1984), Item 301-7, the Committee recommended the establishment of a task force to deal with the issues developing with in-motion-weighing, particularly the definition of a unit train and the test methods to be used for devices weighing unit trains. Because a number of other task forces are already dealing with special problems and because of the press of other issues, a task force was not established. However, representatives of the American Association of Railroads (AAR) did start an effort. A recommended test method and report form was developed and some initial tests run. An oral report of progress was presented to the Conference by a representative of AAR. The Committee appreciates this effort and feels that the work of this group would be a vital and significant contribution to the Conference. The Committee urges that this work be continued and hopes that a report can be developed for its study and review at the next interim meeting in January 1986.

302-16 REPORT OF THE NATIONAL TYPE EVALUATION TECHNICAL COMMITTEE, SCALES AND WEIGHING SYSTEMS SECTOR.

(This item was adopted)

On the basis of the Meeting of this Technical Committee the Specifications and Tolerances Committee recommends the additions or amendments to the Handbook on Type Evaluations in Appendix A.

BELT-CONVEYOR SCALES CODE

303-1 CODE REVISION

(This item was adopted)

The Belt-Conveyor Scales Task Force submitted its final draft revision of the Code to the Committee on Specifications and Tolerances prior to the NCWM Interim Meeting. The Committee felt there were several issues in this draft in need of clarification and circulated a questionnaire to the Task Force for their comments. On the basis of the response, the Committee made a few changes to the final draft, and now presents as its recommendation for adoption the Revised Code for Belt-Conveyor Scales as it appears in Appendix B.

SECTION 2.22.
AUTOMATIC BULK WEIGHING SYSTEMS FOR GRAIN CODE

304-1 FEDERAL GRAIN INSPECTION SERVICE (FGIS)

(Information item)

The Committee was informed that the Federal Grain Inspection Service is reviewing its regulations applicable to these systems, as well as other scales under its jurisdiction. The Committee urges FGIS to reference in its entirety this code which was cooperatively developed and mutually agreed upon by FGIS and OWM. This will result in national uniformity with a Code that is equitable, practical, efficient, and effective for all parties concerned. A report was made at the Conference by a representative of FGIS indicating that a review of its regulations has been made and submitted to OMB for approval and is expected to be printed in the Federal Register in about 30 days.

304-2 IMPACT OF NEW SCALES CODE FORMAT AND TOLERANCES.

(This item was adopted as part of the Consent Calendar)

It is the view of the Committee that this Grain Code recognizes a special type and design of device and should be maintained as a separate Code. However, the Committee recommends that the requirements in the new Scales Code listed below (marking requirements and requirements involving influence factors) be added on a nonretroactive basis and numbered according to this Grain Code.

T.N.7.2. DISCRIMINATION/DIGITAL AUTOMATIC INDICATING.

T.N.8. INFLUENCE FACTORS
- T.N.8.1. TEMPERATURE
  - T.N.8.1.1.
  - T.N.8.1.2.
  - T.N.8.1.3. TEMPERATURE EFFECT ON ZERO-LOAD BALANCE.
  - T.N.8.1.4. OPERATING TEMPERATURE.
- T.N.8.2. HUMIDITY
- T.N.8.3. ELECTRIC POWER SUPPLY
  - T.N.8.3.1. POWER SUPPLY, VOLTAGE AND FREQUENCY
  - T.N.8.3.2. POWER INTERRUPTION
- T.N.8.4. BAROMETRIC PRESSURE.

S.6.5. MARKING REQUIREMENTS/TEMPERATURE LIMITS.

304-3 APPLICATION OF THIS CODE TO ALL SYSTEMS.

(Information item)

A recommendation was received that this Code be amended to include all such systems, not only those used for weighing grain. The Committee agrees in principle with this suggestion but is not certain that time is sufficient to adequately determine the impact on all other such systems used for weighing other materials. The Committee's greatest concern is with systems used to weigh construction materials such as sand and gravel, or minerals such as coal and ore.

A brief overview of this code seems to indicate that all other systems could be included with the following changes or additions:

T.2.1. MINIMUM TOLERANCE VALUES/FOR SYSTEMS USED TO WEIGH CONSTRUCTION MATERIALS. - The minimum maintenance and acceptance tolerance shall be 0.1 percent of the weighing capacity of the system, or the value of the scale division, whichever is less.

T.3.1. BASIC TOLERANCE VALUES/FOR SYSTEMS USED TO WEIGH COMMODITIES OTHER THAN GRAIN. - The basic maintenance tolerance shall be two pounds per 1000 pounds of test load (0.2 percent). The basic acceptance tolerance shall be one-half the basic maintenance tolerance.

UR.1.1. SELECTION REQUIREMENTS/FOR SYSTEMS USED TO WEIGH COMMODITIES OTHER THAN GRAIN. - The number of scale divisions shall not be less than 500 or greater than 10,000.

UR.3.1. LOADING REQUIREMENTS/FOR SYSTEMS USED TO WEIGH COMMODITIES OTHER THAN GRAIN. - A system shall not be used to weigh drafts of less than 20% of the weighing capacity of the system except for a final partial draft.

If the comments received are mostly positive and any negative comments can be properly addressed, the Committee will recommend adoption by the 71st Conference.

The Committee reminds the Conference that this code does not apply to batching systems, for which the Scale Code applies.

SECTION 2.23. WEIGHTS CODE

305-1 T. TOLERANCES, TABLE 1.

(This item was adopted as part of the Consent Calendar)

On the basis of a suggestion received, the Committee recommends that equivalent metric units be added for the tolerances specified in this table. In the interest of space, the table is not reproduced in this report; the Committee hopes that this inconvenience is acceptable to the Conference, considering that the values are unchanged.

SECTION 3.30 LIQUID MEASURING DEVICES CODE

306-1 AGREEMENT BETWEEN INDICATIONS.

(This item was adopted as part of the Consent Calendar)

The Committee was alerted to a situation where quantity values within a system do not agree. This condition had already been recognized and deemed appropriate in the Type Evaluation Handbook. However, this information is not readily available to the field inspector, hence should be included in H-44 for ready reference. An explanation follows:

A retail motor fuel dispenser equipped with an electronic digital indicating computing element may also be equipped with a pulser that "pulses" only money values, sending that information to a console. The console receives the information and displays a total sales price that is exactly the same value as displayed on the dispenser. The quantity value displayed by the console is "derived" at the console by dividing the total sales price by the unit price. Because more than one quantity at a particular unit price can result from the total sales price, the quantity value displayed at the dispenser may differ slightly from the quantity value at the console.

The following illustrates this situation:

Quantity (Gal)	Unit Price	Computed Total Price	Rounded Total Price
18.597	$1.129	$20.9960	$21.00
18.598	1.129	20.9971	21.00
18.599	1.129	20.9983	21.00
18.600	1.129	20.9994	21.00
18.601	1.129	21.0005	21.00
18.602	1.129	21.0017	21.00
18.603	1.129	21.0028	21.00
18.604	1.129	21.0039	21.00

At a unit price of $1.129, eight possible different quantities can result in a correctly computed total price of $21.00. When a customer or an attendant completes a delivery at $21.00, the displayed total quantity could be any value from 18.597 gallons up to and including 18.604 gallons. It is highly unlikely that the displayed total quantity would be the same for any two deliveries of $21.00.

When the console receives only the $21.00 information, it divides this value by $1.129 and, depending on the algorithm by which it is programmed, will present a total quantity value of from 18.597 gallons to 18.604 gallons. If it is programmed to display the first quantity that can result from a $21.00 sale at $1.129 a gallon, it will display a quantity, of 18.597 gallons. If it is programmed to display the largest quantity it will display 18.604 gallons.

This technology has been deemed appropriate since the total price to the customer is always correct and the same at the dispenser and console. The formula of quantity times unit price equals sales price to the nearest cent is met by both the dispenser and the console, and there are inherent economies in utilizing only one pulser.

It has been recommended that the algorithm to be used is that which displays the largest quantity at the console. Thus, when a customer orders a specific quantity of product, the dispenser should stop at a delivery equal to or greater than the amount of product requested.

To respond to the suggestion that this technology be recognized in H-44, the Committee recommends that S.1.4.5. be renumbered S.1.4.7. and that a new paragraph be added to read:

S.1.4.5. AGREEMENT BETWEEN INDICATIONS. -When a quantity value indicated or recorded by an auxiliary element is a derived or computed value based on data received from a retail motor fuel dispenser, the value may differ from the quantity value displayed on the dispenser, provided the following conditions are met:

(a) all total money values for an individual sale that are indicated or recorded by the system agree, and

(b) within each element, the values indicated or recorded meet the formula (quantity x unit price = total sales price) to the closest cent.

306-2 RECORDED REPRESENTATIONS, POINT OF SALE SYSTEMS.

(This item was adopted as part of the Consent Calendar)

During a meeting of the NTETC, all agreed that a ticket issued by an electronic cash register in a point of sale system should include product identity. It was the view of NTETC that this information could not be required in the Type Evaluation Handbook without H-44 amendment.

It is the view of the Committee that the same principles expressed in the Scales Code paragraph S.1.8.4. dealing with this technology for scales is also appropriate for liquid-measuring devices. Thus the Committee recommends the Code be amended by adding the following new nonretroactive paragraph:

S.1.4.6. RECORDED REPRESENTATIONS, POINT OF SALE SYSTEMS.-The sales information recorded by cash registers when interfaced with a retail motor-fuel dispenser shall contain the following information for products delivered by the dispenser;

(a) the total volume of the delivery,
(b) the unit price,
(c) the total computed price, and
(d) the product identity by name, symbol, abbreviation, or code number.

(Nonretroactive as of January 1, 1986)

306-3 S.2.5. ZERO-SET-BACK INTERLOCK.

(This item was adopted as part of the Consent Calendar)

A comment was received that, although a particular design of a zero-set-back interlock seemed consistent with the criteria of this paragraph, the design of the starting lever itself or the hook on which the handle is hung could be such that an operator could by-pass the interlock and this action not be readily apparent to a customer. It is the view of the Committee that it is impossible to write an all-inclusive paragraph, and that this condition would best be controlled by applying General Code paragraph G-S.2. Facilitation of Fraud. Thus, the Committee recommends that this requirement be amended by adding the following parenthetical to the end of this paragraph:

(See also G-S.2.)

306-4 SECTION 3, ALL CODES DEALING WITH LIQUID-MEASURING DEVICES

(Information item)

Consistent with the five-year plan of the Committee, a draft revision of Sec. 3 was prepared for review by the Committee at its interim meeting.

It is the view of the Committee that this draft should be considered by the Conference. However, because of the many other important issues facing the Conference and the magnitude of the draft, it was decided that the draft not be printed in this year's report, but rather widely circulated as a separate document to all interested parties, and available at this year's Conference.

The Committee requests that all recipients of the draft review it carefully during 1985 and that comments be submitted to the Committee prior to its interim meeting in January 1986, so that the Committee can recommend appropriate action to the 1986 Conference.

306-5 REPORT OF THE NATIONAL TYPE EVALUATION TECHNICAL COMMITTEE, METERS AND MEASURING SECTION

(This item was adopted)

On the basis of the meeting of NTETC, the Committee recommends additions to the Handbook on Type Evaluations in Appendix C.

SECTION 3.31. VEHICLE TANK METERS CODE

307-1 SPLIT COMPARTMENT TEST

(Information item)

The Committee considered two recommendations concerning this test. The first dealt with the impact of this test on single compartment vehicles, and the other requested review of the appropriateness of the tolerance applicable to this test.

With respect to single compartment vehicles, it is the Committee's view that this test should be conducted on single compartment vehicles since it is reasonable to assume that the tank will be emptied in some deliveries. The Committee will include this clarification in the recommended consolidation of all L.M.D. codes for action next year.

The Committee has reviewed the subject of applicable tolerances a number of times over the years without recommendating change. The Committee is aware that the error in delivery caused by exhaustion of the supply of fluid in a tank is generally not dependent on the size of the delivery. The problem with the existing tolerance on a split compartment test is that the tolerance on a 200-gallon delivery is twice the tolerance on a 100-gallon delivery, and the error on the same vehicle tank meter would likely be the same for both deliveries.

The existing tolerance (acceptance and maintenance) on a split compartment test is 1 cubic inch per gallon, 0.43% in relative terms.

To eliminate the apparent disparity between the tolerance when using a 200-gallon prover that is twice that for the usual 100-gallon prover would

require that the tolerance on this test be established in another way. This could be done, for example, by establishing the tolerance for any size delivery as a fixed value based on meter size (such as 1 1/4 in) or maximum delivery rate (e.g., 250 gpm).

Until now the Committee has felt that the present tolerance is equitable and practical since it represents a maximum error of 0.43% for any delivery when the supply is exhausted. It also means that, if a meter is performing near the tolerance limits in a negative direction during a normal test, the meter would likely fail the split compartment test. If an additive tolerance were used, this would not necessarily be so.

The Committee intends to continue its review of all tolerances as applied to all meters and of the problem of prover design, and will welcome comments or data on these subjects.

307-2 AGRI-CHEMICAL METERS.

(This item was adopted)

In the Committee's report to the 69th NCWM (1984), the item on this subject (303-9) included the recommendations of the Meter Manufacturers' Technical Committee for a code for equipment dispensing agri-chemicals. Only limited data were available with respect to the performance capabilities of this equipment and the Committee requested additional data from Conference members. Only a small amount of additional data has been received. It is the Committee's view that Code requirements are necessary now, and that only when there is a code will further data develop. Thus the Committee recommends that the Code for Vehicle-Tank Meters be amended and the Code for Liquid-Measuring Devices be similarly amended to apply to wholesale devices as follows:

Amend A.1. to read,

> A.1. - This Code applies to meters mounted on vehicle tanks including those used for the measurement and delivery of petroleum products or agri-chemical liquids such as fertilizers, feeds, herbicides, pesticides, insecticides, fungicides, and defoliants.

Add a new tolerance paragraph to read:

> T.3. TOLERANCE VALUES ON METERS USED FOR THE MEASUREMENT OF AGRI-CHEMICAL LIQUIDS.-The maintenance tolerance on normal and special tests shall be 1% of the indicated volume. The acceptance tolerance on a normal test shall be 0.5% of the indicated volume and, on special tests, 1% of the indicated volume.

The Committee recommends that safety and health standards be followed when testing devices dispensing these products.

307-3 FIELD STANDARDS

(Information item)

It has become apparent that a problem exists with respect to the design of large capacity provers used for the test of loading-rack meters. Data submitted by several States as well as a limited amount developed by OWM indicate that provers do not always provide comparable and repeatable results when used in the field. It is anticipated that a combined effort among API, the States, and OWM can result in the collection of sufficient data to revise NBS H-105-3. This revision will provide additional design criteria for bottom loading provers, the area where most of the problems seem to be centered.

SECTION 4.43. FARM MILK TANKS

308-1 S.3. DESIGN OF INDICATING MEANS.

(This item was adopted as part of the Consent Calendar)

A comment was received that the range of volume of a tank over which it is to be calibrated has not been specified. It was stated that manufacturers were sometimes using gauge rods on large tanks that were originally designed for a smaller tank resulting in significant quantities of milk that could not be measured. There is a need to determine the volume of milk at lower levels in the tank. It was therefore suggested that a calibration should be required from 5% of capacity or 500 gallons, whichever is less, to the capacity of the tank.

The Committee agrees and recommends that the code be amended by adding a new nonretroactive paragraph to read:

> **S.3.1. DESIGN OF INDICATING MEANS/GENERAL. - A tank shall include indicating means and shall be calibrated over the entire range of the volume of the tank from 5 percent of capacity or 500 gallons, whichever is less, to its maximum capacity. (Nonretroactive as of January 1, 1986)**

Renumber appropriately the paragraphs that follow.

Amend S.4.1. DESIGN OF VOLUME CHART/GENERAL by adding the following words at the end of the first sentence:

> ...only **"over the entire range of the volume of the tank from 5 percent of capacity or 500 gallons, whichever is less, to its maximum capacity."**

308-2 DEFINITIONS

(This item was adopted as part of the Consent Calendar)

A recommendation was received that the addition of two definitions would aid in differentiating between the two different activities, gauging (or

calibration), and testing. The Committee agrees and recommends that the following two definitions be added:

> gauging. The process of determining and assigning volumetric values to specific graduations on the gauge or gauge rod that serve as the basis for the tank volume chart.
>
> testing. An operation consisting of a series of volumetric determinations made to verify the accuracy of the volume chart that was developed by gauging.

SECTION 5.54. TAXIMETERS

309-1 UR.2 POSITION AND ILLUMINATION OF A TAXIMETER.

(This item was adopted as part of the Consent Calendar)

It is the view of the Committee that the meaning of this paragraph is unclear. The Committee recommends that this paragraph be amended to read:

> UR.2 POSITION AND ILLUMINATION OF A TAXIMETER. -A taximeter shall be so positioned and illuminated that its indications, operational markings, and controls can be conveniently read by a passenger seated in the back seat of the vehicle.

309-2 TYPE EVALUATION CRITERIA FOR TAXIMETERS.

(This item was adopted as part of the Consent Calendar)

Type evaluation criteria and a checklist have been jointly developed by the State of California and OWM. The draft was circulated to seven manufacturers. As a result, the Committee recommends that the checklist in Appendix D be included in the Handbook on Type Evaluations.

The Committee expresses its sincere and grateful appreciation to all those offering comments and suggestions. In most instances, the information was presented in an orderly and effective manner, which greatly facilitated review of the information by the Committee and action thereon. It is only through such cooperative effort that the Conference can continue to attain uniform and equitable measurement standards. The Committee also expresses its appreciation to all those participating in the Interim Meeting. The comments and suggestions greatly aided the Committee in its deliberation.

D. A. Guensler, California, Chairman

R. Anderson, New York
K. S. Butcher, Maryland
F. A. Gerk, New Mexico
R. W. Probst, Wisconsin

O. K. Warnlof, NBS, Technical Advisor

APPENDIX A

AMENDMENTS TO HANDBOOK ON TYPE EVALUATION
Temperature

Purpose - To determine the performance and operating characteristics of the equipment under test at different temperature levels under normal operating conditions.

Pre-Test Determinations

1. Test equipment needed:

   1.1. Climate chamber
   1.2. Load cell simulator, if applicable
   1.3. Calibrated thermometers and hygrometers

2. Simulated signal conditions:

   2.1. Isolated from test conditions (to be operated in normal laboratory environment)

3. Conditions of equipment under test:

   3.1. Normal power supplied and "on" for a time period equal to or greater than the warm-up time specified by manufacturer
   3.2. Adjusted as close as practicable to zero error prior to each test.
   3.3. Not to be adjusted or readjusted at any time during test.
   3.4. A.Z.S.M. operable if so equipped, and appropriate for intended use.

4. Allowable variations in test conditions:

   4.1. $\pm$ 4.5 ^{o}F (2.5 ^{o}C)
   4.2. Moisture content of the test atmosphere must not exceed 20 g/m^{3}
   4.3. All other variables to be held as nearly as practicable to a normal condition

5. Number of test cycles to be conducted or test duration:

   5.1. At least one cycle

6. Temperature limits:

   6.1. Determine temperature limits. See Scales Code paragraphs T.N.8.1.1. and T.N.8.1.2.

7. Maximum allowable variations on equipment under test:

   7.1. All functions must operate as designed
   7.2. "0" drift not to exceed requirements specified in Scales Code paragraph T.N.8.1.3.

7.3. All indications within the tolerance values specified in Scales Code part T.N.3.

Test

1. Stabilize equipment under test in climate chamber at a reference temperature at the midpoint of the temperature extremes and at a moisture content not greater than 20 g/m^3 for a period of three hours

2. Conduct increasing and decreasing load tests with at least four different test loads including the maximum test loads at each tolerance value level

3. Record data: a) time, b) temperature, c) relative humidity, d) test load, e) indication, f) error, g) functions performance

4. Increase temperature to maximum specified and allow equipment to stabilize for three hours*

5. Rezero if necessary and repeat steps 2 and 3

6. Reduce temperature to minimum specified and allow equipment to stabilize for three hours*

7. Rezero if necessary and repeat steps 2 and 3

8. Increase temperature to original reference temperature and allow equipment to stabilize for three hours*

9. Rezero if necessary and repeat steps 2 and 3

10. Additional tests may be conducted at other levels within the temperature range

* The rate of change must not exceed 9 ^{o}F (5 ^{o}C) per hour, and the change in the zero indication during that time period shall not exceed 1d.

Humidity*

Purpose - to determine the performance and operating characteristics of the equipment under test at different humidity levels under normal operating conditions.

Pre-Test Determinations

1. Test equipment needed:

   1.1. Climate chamber
   1.2. Load cell simulator, if applicable
   1.3. Calibrated hygrometers and thermometers

2. Simulated signal conditions:

   2.1. Isolated from test conditions (to be operated in a normal laboratory environment)

3. Conditions of equipment under test:

   3.1. Normal power supplied and "on" for duration of test
   3.2. Adjusted as close as practicable to zero error prior to test
   3.3. Not to be adjusted or readjusted at any time during test
   3.4. A.Z.S.M. operates if so equipped and appropriate for intended use

4. Allowable variations in test conditions:

   4.1. $\pm$ 4.5 ^{o}F (2.5 ^{o}C) for all reference temperatures
   4.2. $\pm$ 3% relative humidity
   4.3. All other variables to be held as nearly as practicable to a normal condition

5. Number of test cycles to be conducted or test duration:

   5.1. One cycle for a test duration of 4 days

6. Relative humidity and temperature limits:

   6.1. 93% (non-condensing)
   6.2. Maximum temperature specified for the device

7. Maximum allowable variations on equipment under test:

   7.1. All functions must operate correctly
   7.2. All indications within the tolerance values specified in Scale Code Part T.N.3.

* Not applicable to Class I and Class II instruments.

Test

1. Stabilize equipment in the climate chamber at a reference temperature of 68 ^{o}F (20 ^{o}C) and a relative humidity of 50% for a period of 3 hours

2. Conduct increasing and decreasing load tests with at least four different test loads, including the maximum test loads at each tolerance value level

3. Record data: a) time, b) temperature, c) relative humidity, d) test load, e) indication, f) error, g) functions performance

4. Increase temperature to maximum specified and increase relative humidity to 93% (non-condensing) and stabilize for 16 hours

5. Maintain reference conditions specified in point 4 for a period of 4 days

6. Rezero if necessary and repeat steps 2 and 3 above

Power Voltage Variations

Purpose - to determine the performance and operating characteristics of the equipment under test at different voltage levels under normal operating conditions.

Pre-Test Determinations

1. Test equipment needed:

   1.1. Variable power source
   1.2. Calibrated Voltmeter
   1.3. Load Cell simulator if applicable

2. Simulated signal conditions:

   2.1. Isolated from test conditions (to be operated in normal laboratory environment)

3. Conditions of equipment under test:

   3.1. Normal power supplied and "on" for a time period equal to or greater than the warm-up time specified by the manufacturer
   3.2. Adjusted as closely as practicable to zero error
   3.3. Not to be adjusted or readjusted at any time during test
   3.4. A.Z.S.M., operable if so equipped and appropriate for intended use

4. Allowable variations in test conditions:

   4.1. $\pm$ 2 percent of power supply
   4.2. All other variables to be held as nearly as practicable to a normal condition

5. Number of test cycles to be conducted or test duration:

   5.1. At least one cycle

6. Power supply limits:

   6.1. As specified in Scale Code paragraph T.N.8.3.1.

7. Maximum allowable variations on equipment under test:

   7.1. All functions must operate correctly
   7.2. All indications within the tolerance values specified in Scale Code part T.N.3.

Test

1. With power supply connected and equipment under test "on", warm-up equipment for a time interval equal to or exceeding manufacturer's specified warm-up time

2. Stabilize power supply at nominal voltage $\pm$ 2 percent

3. Conduct increasing and decreasing load test with at least four different test loads, including the maximum test loads at each tolerance value level

4. Record data: a) time, b) temperature, c) relative humidity, d) power supply voltage, e) test load, f) indication, g) error, and h) functions performance

5. Reduce power supply to minimum specified

6. Rezero if necessary and repeat steps 3 and 4

7. Increase power supply to maximum specified

8. Rezero if necessary and repeat steps 3 and 4

9. Reduce power supply to nominal

10. Rezero if necessary and repeat steps 3 and 4

RFI Susceptibility

(Applicable to a complete weighing device and separate main elements tested individually).

Purpose - to determine the effect of disturbances caused by specified radiated interference on the performance and operating characteristics of the equipment under test.

Pre-Test Determination

1. Test equipment needed:

   1.1. Test equipment capable of producing output frequencies of 27 MHz, 5 watts; and 460 MHz, 4 watts at a field strength of 3 V/m
   1.2. Equipment capable of verifying field strength at the frequency range

2. Simulated signal conditions:

   2.1. Cable to instrument installed per manufacturer's instructions or mutually agreed upon installation
   2.2. Power supply cable to instrument according to manufacturer's specifications or mutually agreed upon installation

3. Conditions of equipment under test:

   3.1. Normal power supplied and "on" for a time period equal to or greater than the warm-up time specified by manufacturer
   3.2. Adjust as close as practicable to zero error prior to test
   3.3. Not to be adjusted or readjusted except to reset if a fault has been indicated
   3.4. A.Z.S.M. "off"

4. Allowable variations in test conditions:

   4.1. All factors to be held as nearly as practicable to nominal or specified reference values

5. Number of test cycles to be conducted or test duration

   5.1. One test

6. Interference value limits:

Field Strength	Frequency	Modulation
3 V/m	27 MHz, 5 watts	50% AM, 1 kHz sine wave
	460 MHz, 4 watts	

7. Maximum allowable variations in equipment under test:

   The variation of the weight indications due to the disturbance compared with the indication without the disturbance either must not exceed one d, or the instrument must:

   - Blank the indication or indicate an error message, or

   - The indication is completely unstable so that it could not be interpreted, or transmitted into memory, or to a printer, as a measurement value.

Test

1. The test is to be conducted at nominal reference conditions with power supplied and "on" and warmed-up, and with the communicator antenna positioned one meter from the electronic equipment under test.

2. Operate the communicator individually in accordance with FCC regulations, in the transmit mode.

3. Scan the equipment under test and any interconnecting cables by repositioning the communicator, taking care to maintain a distance of one meter.

4. Observe and record effect on equipment at zero load and at least one test load for each frequency.

Permanence Test

(Applicable only to Class III and IIII instruments up to and including 2000 pounds capacity.)

Purpose - To determine that the equipment under test will maintain its metrological characteristics under simulated conditions of use.

Pre-Test Determinations

1. Test equipment needed:

   1.1. Device for repeated application of test loads

2. Conditions of equipment under test:

   2.1. Normal power supplied and "on" for a time period equal to or greater than the warm-up time specified by manufacturer
   2.2. Adjusted as close as practicable to zero error prior to test
   2.3. Not to be adjusted or readjusted at any time during test

3. Allowable variations in test conditions:

   3.1. All variables to be held as nearly as practicable to normal operating conditions

4. Number of test cycles to be conducted or test duration:

   4.1. One test cycle of 100,000 weight applications.

5. Test load:

   5.1. 50 % of maximum capacity

6. Maximum allowable variations on equipment under test:

   6.1. All functions must operate correctly
   6.2. All indications must be within the tolerance values specified in Scales Code part T.N.3.

Test

1. Energize the electronic weighing instrument and verify that all operational and metrological requirements are within the specified limits

2. Adjust the instrument as close as possible to zero

3. Conduct a normal test with at least four different test loads to maximum capacity and record the data. The test loads should include the maximum test load at each tolerance value level

4. Apply approximately 25,000 applications of test load at 50 % capacity. It is recommended that the frequency and speed of application of the load shall allow the instrument to come to rest both when loaded and unloaded

5. Repeat step 3

6. Repeat steps 4 and 5 three more times until 100,000 weight applications have been recorded

Under Indicating and Recording Elements/General, Code Reference G-S.5.3. Values of Graduated Intervals or Increments, add:

2. For scales indicating in two or more units, are consecutive scale division values indicated throughout the entire weighing range for all units?

Under Marking; Operational Controls, Indications and Features, Code Reference G-S.6., add:

1.a. The following symbols are considered acceptable without being further defined.

→○←: zero key or center of zero indicator
→⏉ : tare enter key
←⏉ : tare clear key

Under Automatic Multi-range Scales, change number 7 to read:

7. Except for Class I scales and Class II scales not used in direct trade, the device must indicate the same value of d for decreasing loads as indicated for increasing loads.

Under E.C.R., Code Reference S.1.8.4. Recorded Representations, change item 2.d. iiii to read:

If a dollar sign is not used to define the total price, there must be at least one column offset of the least significant digit in the total price from other decimal points in other recorded information.

Under 1.d. add the following:

Examples of product class are: "MT" for meat, "BK" for bakery, "DA" for dairy, "DE" for delicatessen, etc.

Under Recorded Representations, Code References G-S.5.6., G-S.5.1., Item 6. Random Labels by Count: paragraph b., add the following:

Note: If there are no individual blocks for the printed information, and the printer prints a qualifying term such as "pieces" or a symbol such as "pcs" in a horizontal manner reading from left to right, and there is little doubt as to the meaning of the label, it is considered appropriate.

Under Values Defined, Code References G-S.5.2.4., G-S.5.6.1., 2.e.i., change to read:

2.e.i. The unit shall appear adjacent to the weight display, within a distance equal to the width of the weight values displayed.

TYPE EVALUATION CRITERIA
GRAIN TEST SCALES

		Complies?
1.	Those equipped with semiautomatic zero setting mechanism (pushbutton) can have this feature only with motion detection; i.e., it must meet the criteria specified in S.2.1.2. On Scales Used in Direct Sales.	Yes No N/A
2.	Test weight values must be computed to 0.01 pound per bushel or 0.01 kilogram per hectoliter. These values must round off. The symbol for bushel is lower case bu, except for a recording element equipped with only upper case letters.	Yes No N/A
3.	Any calculation can only be based on the weight on the platform.	Yes No N/A
4.	Any operation for storing information into a memory must have motion detection.	Yes No N/A
5.	Only a semiautomatic (pushbutton) tare is allowed.	Yes No N/A
6.	Calculations for test weight or percentage must be in mathematical agreement with calculations done manually using the displayed weights for the calculations.	Yes No N/A

The Federal Grain Inspection Service requirements for grain test scales used for official U.S. Department of Agriculture/Federal Grain Inspection Service applications are more stringent than for Handbook 44 applications.

7.	For Handbook 44 applications, percent calculations cannot be displayed unless:		
	(a) the value of the scale division is less than or equal to 0.2 g for loads up to 500 g and less than or equal to 0.5 g for loads greater than 500 g.	Yes No N/A	
	(b) the percentage values are computed to at least 0.1%.	Yes No N/A	

		Complies?
8.	For FGIS applications, percent calculations cannot be displayed unless:	
	(c) the sample is greater than or equal to 120 g.	Yes No N/A
	(d) the value of the scale division is less than or equal to 0.01 g.	Yes No N/A
	(e) the quantity used for the sample is weighed prior to the dockage (thus eliminating any percentage values in excess of 100 percent).	Yes No N/A
	(f) the percentage values are computed to at least 0.01%. If displayed to 0.01%, the values shall be rounded to the nearest 0.01%.	Yes No N/A

Future items for discussion by this Committee will include Test Procedures for Short Time Power Interruptions, Conducted Interference, Electrostatic Discharge, and Load Cells.

APPENDIX B

BELT-CONVEYOR SCALE SYSTEMS

A. APPLICATION

A.1.- This code applies to belt-conveyor scale systems used for the weighing of bulk materials.

A.2.- The code does not apply to:

(a) devices used for discrete weighing while moving on conveyors
(b) devices that measure quantity on a time basis
(c) check-weighers
(d) controllers or other auxilliary devices except as they may affect the weighing performance of the belt-conveyor scale.

A.3.- See also General Code requirements.

S. SPECIFICATIONS

S.1. DESIGN OF INDICATING AND RECORDING ELEMENTS

S.1.1. GENERAL.- A belt-conveyor scale shall be equipped with a primary indicating element in the form of a master weight totalizer and **shall also be equipped with a recording element and a rate of flow indicator or recorder.*** An auxiliary indicator shall not be considered part of the master weight totalizer. ***(Nonretroactive as of January 1, 1986.)**

S.1.2. UNITS.- A belt-conveyor scale shall indicate and record weight units in terms of pounds, tons, long tons, metric tons, or kilograms. The value of a scale division (d) expressed in a unit of weight shall be equal to:

a. 1, 2, or 5, or

b. a decimal multiple or submultiple of 1, 2, or 5.

S.1.3. VALUE OF THE SCALE DIVISION

S.1.3.1. FOR SCALES INSTALLED AFTER JANUARY 1, 1986. - The value of the scale division shall not be greater than 0.1% (1/1000) of the minimum totalized load. (Nonretroactive as of January 1, 1986)

S.1.3.2. FOR SCALES INSTALLED BEFORE JANUARY 1, 1986. - The value of the scale division shall not be greater than 1/1200 of the rated capacity of the device. However, provision shall be made so that compliance with the requirements of the zero-load test as prescribed in N.3.1. may be readily and accurately determined in 20 minutes of operation.

S.1.4. RECORDING ELEMENTS AND RECORDED REPRESENTATIONS.- The value of the scale division of the recording element shall be the same as that of the indicating element. It shall record the unit of measurement (i.e., pounds, tons, etc.), the date, and time. (Nonretroactive as of January 1, 1986.)

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. 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 equal to or greater than 100% 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.)

S.1.6. ADVANCEMENT OF PRIMARY INDICATING OR RECORDING ELEMENTS. -The primary indicating and recording elements shall advance only when the belt conveyor is in operation and under load.

S.1.7. MASTER WEIGHT TOTALIZER.- The master weight totalizer shall not be resettable **without breaking a security means. (Nonretroactive as of January 1, 1986.)**

S.1.8. POWER LOSS.- In the event of power failure, 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.)

S.2. DESIGN OF WEIGHING ELEMENTS.- A belt-conveyor scale system shall be designed to combine automatically belt travel with belt load to provide a determination of the weight of the material that has passed over the scale.

S.2.1. SPEED MEASUREMENT. - A belt-conveyor scale shall be equipped with a belt speed or travel sensor that will accurately sense the belt speed or travel whether the belt is empty or loaded.

S.2.2. ADJUSTABLE COMPONENTS.- An adjustable component that can affect the performance of the device (except as prescribed in S.3.1) shall be held securely in adjustment and shall not be capable of adjustment without breaking a security means.

S.2.3. OVERLOAD PROTECTION.- The load receiving elements shall be equipped with means for overload protection of not less than 150 percent of rated capacity. The accuracy of the scale in its normal loading range, shall not be affected by overloading.

S.3. ZERO SETTING

S.3.1. DESIGN OF ZERO SETTING MECHANISM.- The range of the zero-setting mechanism shall be not greater than 2 percent of the rated capacity of the scale without breaking the security means. Automatic and semi-automatic zero-setting mechanisms shall be so constructed 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.

S.3.2. SENSITIVITY AT ZERO LOAD. (For Type Evaluation) - When a system is operated for a time period equal to the time required to deliver the minimum test load and with a test load calculated to indicate two scale divisions applied directly to the weighing element, the totalizer shall advance not less than one nor more than three scale divisions. An alternative test of equivalent sensitivity, as specified by the manufacturer, shall also be acceptable. (Nonretroactive as of January 1, 1986.)

S.4. MARKING REQUIREMENTS.- A belt-conveyor scale shall be marked with the following: (See Also G-S.1.)

(a) The rated capacity in units of weight per hour (minimum and maximum)

(b) The value of the scale division.

(c) The belt speed in terms of feet or meters per minute at which the belt will deliver the rated capacity.

(d) The load in terms of pounds per foot or kilograms per meter.

(e) **The operational temperature range if other than 14 °F to 104 °F.***

* **(Nonretroactive as of January 1, 1986.)**

N. NOTES

N.1. GENERAL.- Belt-conveyor scales are capable of weighing bulk material accurately (see tolerances). However, their performance can be detrimentally affected by the conditions of the installation. (See User Requirements)

N.1.1. OFFICIAL TEST.- An Official test of a belt-conveyor scale system shall be a materials test.

N.1.2. SIMULATED TEST.- Simulated loading conditions as recommended by the manufacturer and approved by the certifying authority may be used to properly monitor the system operational performance between official tests, but shall not be used for official certification.

N.2. CONDITIONS OF TESTS.- A belt-conveyor scale shall be tested after it is installed on the conveyor system with which it is to be used and under such environmental conditions as may normally be expected. It shall be tested at normal use capacity and may be tested at any other rate of flow that may be used at the installation. Each test shall last long enough to deliver a load of at least 1000 scale divisions and for at least three revolutions of the belt. In addition, one of the following must be met, whichever is applicable:

(a) Ten minutes operation, or

(b) A normal weighment, which need not exceed 1000 tons.

N.3. TEST PROCEDURES

N.3.1. ZERO LOAD TEST.- If a belt-conveyor scale system has been idle for a period of two 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 shall not change more than ± one 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 test.

N.3.2. MATERIAL TEST. - Use bulk material, preferably that material for which the device is normally used. Either pass a preweighed quantity of material that has been 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. Means for weighing the material test load will depend on the capacity of the belt-conveyor scale and availability of a suitable scale for the test. Where practicable, the substitution method of weighing should be used. To assure that the test load is accurately weighed and determined, the following precautions shall be observed:

(a) The containers, whether they are railroad cars, trucks, or boxes, must not leak and shall not be overloaded to the point that material will be lost.

(b) The actual empty or tare weight of the containers shall be determined at the time of the test. Stencilled tare weight of railway cars or trucks shall not be used. Gross and tare weights shall be determined on the same certified reference scale.

(c) When a pre-weighed test load is passed over the scale, the belt loading hopper shall be examined before and after the test to assure that the hopper is empty and that only the material of the test load has passed over the scale.

(d) When a railway track scale is used as a certified reference scale to weigh the test load, not more than 48 hours shall elapse between the test on the belt-conveyor scale and the determination of the weight of the test load. When other scales are used, the elapsed time shall be not more than eight hours.

(e) The test shall not be conducted if the weight of the test load has been affected by environmental conditions.

(f) A minimum of three individual tests shall be conducted for each official verification. The performance of the scale is not to be determined by averaging the results of the individual tests., but by successfully passng each test.

N.3.3. SIMULATED LOAD TESTS. - Simulated load tests are to be conducted as required by the certifying authority between material tests to monitor the system's operational performance, but shall not be used for official certification. Such tests shall consist of placing a weight on the belt-conveyor scale over the weight sensing element to simulate, as closely as possible, the load that the scale is designed to weigh. A simulated test shall be comprised of at least five consecutive test runs and the results shall repeat within 0.1%. One of the following tests, in accordance with the recommendation of the belt-conveyor scale manufacturer, shall be used:

(a) CHAIN TEST. - A suitable test chain of the free-roller or wheel type shall be used. Calibration of the weight per unit of length for use in all tests must be factored on the basis of scale calibration to material and simulated test results. The test chain should extend across all scale rollers and, in addition, not less than two idler rollers before and beyond the scale. It may be connected to a stationary part of the structure and allowed to ride on the belt over the scale. The length of belt that has passed over the scale during the test must be accurately measured.

(b) KNOWN WEIGHT TEST. - An alternative simulated load test may be authorized by the certifying authority between materials tests on scales with a rated capacity of 100 tons per hour or less provided that system performance can be verified. Such a test shall consist of placing test weights on the weigh bridge structure over the weight sensing element to accurately simulate the load that the scale is designed to weigh.

T. TOLERANCES

T.1. TOLERANCE VALUES. - Maintenance and acceptance tolerances on materials tests shall be $\pm$ 0.5 percent (1/200) of test load.

T.2. TOLERANCE VALUES, REPEATABILITY TESTS. - The variation in the values obtained during the conduct of materials tests shall not be greater than 0.25 percent (1/400) of test load.

T.3. REFERENCE STANDARDS.- Verifying the accuracy of the certified reference scale is the responsibility of the certifying authority. Where practical, the substitution method of testing shall be used. The maximum error shall not exceed 0.1% on any test load.

T.4. INFLUENCE FACTORS. - The following factors are applicable to tests conducted under controlled conditions only, provided that

(a) types of devices approved prior to January 1, 1986 and manufactured prior to January 1, 1988, need not meet the requirements of this Section;

(b) new types of devices submitted for approval after January 1, 1986 shall comply with the requirements of the Section; and

(c) all devices manufactured after January 1, 1988 shall comply with the requirements of this Section.

T.4.1. TEMPERATURE. - Devices shall satisfy the tolerance requirements at all temperatures from 14 ^{o}F to 104 ^{o}F inclusive.

T.4.1.1. EFFECT ON ZERO-LOAD BALANCE. - The zero-load indication shall not change by more than 0.07% of the rated capacity of the scale (without the belt) for a change in temperature of 18 ^{o}F (10 ^{o}C) at a rate not to exceed 9 ^{o}F (5 ^{o}C) per hour.

T.4.2. POWER SUPPLY, VOLTAGE AND FREQUENCY. - A belt-conveyor scale system shall satisfy the tolerance requirements over a range of 100 to 130 volts or 200 to 250 volts as appropriate and over a frequency range of 59.5 to 60.5 Hz.

T.4.3. RADIATED INTERFERENCE. - A belt-conveyor scale system shall satisfy the tolerance requirements when the following equipment is operated at a distance of one meter or more from any operational part of the system.

460-MHz, 4-watt, hand-held communicator
27-MHz, 5-watt, hand-held communicator

UR. USER REQUIREMENTS

UR.1. USE REQUIREMENTS.- A belt-conveyor scale system shall be operated between 35 and 100 percent of its rated capacity.

UR.1.1. MINIMUM TOTALIZED LOAD. - Delivered quantities of less than the minimum test load shall not be considered a valid weighment.

UR.1.2. SECURITY MEANS. - When a security means has been broken, it shall be reported to the certifying authority.

UR.2. INSTALLATION REQUIREMENTS.-

UR.2.1. PROTECTION FROM ENVIRONMENTAL FACTORS.- The indicating elements, the lever system or load cells, and the load receiving element of a belt-conveyor scale shall be adequately protected from environmental factors such as wind, moisture, dust, weather, and radio frequency interference (RFI) and electromagnetic interference (EMI) that may adversely affect the operation or performance of the device.

UR.2.2. CONVEYOR INSTALLATION.- The design and installation of the conveyor leading to and from the belt-conveyor scale are critical with respect to scale performance. The conveyor may be horizontal or inclined but, if inclined, the angle shall be such that slippage of material along the belt does not occur. Installation shall be in accordance with the scale manufacturer's instructions and the following:

(a) A belt-conveyor scale shall be so installed that neither its performance nor operation will be adversely affected by any characteristic of the foundation, supports, or any other equipment.

(b) All live portions of the scale shall be protected by appropriate guard devices to prevent accidental interference with the weighing operation.

(c) Suitable protection shall be provided for storage of any simulated load equipment.

UR.2.2.1. FOR SCALES NOT INSTALLED BY THE MANUFACTURER. - Unless the scale is installed in a short conveyor, designed and furnished by the scale manufacturer or built to the scale manufacturer's specifications, the conveyor shall comply with the following minimum requirements:

(a) If the belt length is such that a take-up device is required, this device shall be of the counter-weighted type for either vertical or horizontal travel.

(b) The scale shall be so installed that the first weigh idler of the scale is at least 20 feet or 5 idler spaces, whichever is greater, from loading point, skirting, head or tail pulley, or convex curve in the conveyor. Any training idler shall be located at least 60 feet from the center line of the weigh span of the scale.

(c) There shall be no concave curve in the conveyor between the scale and the loading point. A concave curve beyond the scale shall start no closer than 40 feet from the scale.

(d) There shall be no tripper nor movable head pulleys in the conveyor.

(e) The conveyor shall be no longer than 1000 feet nor shorter than 40 feet from head to tail pulley. (Nonretroactive as of January 1, 1986).

(f) Conveyor stringers at the scale and for not less than 20 feet before and beyond the scale shall be continuous or securely joined and of sufficient size and so supported as to eliminate relative deflection between the scale and adjacent idlers when under load. The conveyor stringers should be so designed that the deflection between any two adjacent idlers within the weigh area does not exceed 0.025 inch under load.

(g) The scale area and 4 idlers on both ends of the scale shall be of a contrasting color, or other suitable means shall be used to distinguish the scale from the remainder of the conveyor installation, and the scale shall be readily accessible.

(h) Conveyor belting shall be no heavier than is required for normal use. Under any load, the belt shall contact the center or horizontal portion of the idlers. Splices shall not cause any undue disturbance in scale operation (see N.3.).

(i) The conveyor loading mechanism shall be designed to provide uniform belt loading. The distance from the loading point to the scale shall allow for adequate settling time of the material on the belt before it is weighed. Feeding mechanisms shall have a positive closing or stopping action so that material leakage does not occur. Feeders shall provide an even flow over the scale through the full range of scale operation. Impact idlers shall be provided under each loading point to prevent deflection of the belt while material is loaded.

(j) The belt shall not extend beyond the edge of the idler roller in the weighing area.

UR.2.3. MATERIAL TEST. - A belt-conveyor scale shall be installed so that a material test can be conveniently conducted. (Nonretroactive as of January 1, 1981.)

UR.2.4. BELT TRAVEL (SPEED).- The belt travel sensor shall be positioned to accurately represent the travel of the belt over the scale for all flow rates between the minimum and maximum values and shall be designed and installed to prevent slip.

UR.3. USE REQUIREMENTS

UR.3.1. LOADING.- The feed of material to the scale shall be controlled to assure that, during normal operation, the material flow is in accordance with manufacturer's recommendation for rated capacity.

UR.3.2. MAINTENANCE.- Belt-conveyor scales and idlers shall be maintained and serviced in accordance with manufacturer's instructions and the following.

(a) The scale and area surrounding the scale shall be kept clean of debris or other foreign material that can detrimentally affect the performance of the system.

(b) Simulated load tests shall be conducted at periodic intervals between official tests so that there is reasonable assurance that the device is performing correctly. The action to be taken as a result of simulated load test is as follows:

- if the error is less than 0.4 percent, no adjustment is to be made;

- if the error is 0.4 percentat least but not more than 0.6 percent, adjustment may be made if the certifying authority is notified;

- if the error is greater than 0.6 percent but not more than 0.75 percent, adjustments shall be made by a competent service person and the certifying authority notified. After such an adjustment, if the results of a subsequent test require adjustment in the same direction, an official test shall be conducted;

- if the error is greater than 0.75 percent, an official test is required.

(c) Scale Alignment.- "Wire line" alignment checks shall be considered when conveyor work is performed in the scale area or in accordance with manufacturer's recommendation. A materials test is required after any realignment.

(d) Simulated Load Equipment.- Simulated load equipment shall be clean and properly maintained.

(e) Records.- In order to develop a history of scale performance, records of calibration and maintenance, including conveyor alignment, shall be maintained on site for no less than the last three years. Copies of any report as a result of a test or repair shall be mailed to the certifying authority as required. The current date and correction factor(s) for simulated load equipment shall be recorded and maintained in the scale cabinet.

UR.4. COMPLIANCE.- Prior to initial verification, the scale manufacturer or installer shall certify to the owner that the scale meets code requirements. Prior to initial verification and each subsequent verification, the scale owner or his agent shall notify the certifying authority in writing that the belt-conveyor scale system is in compliance with this specification and ready for material testing.

DEFINITIONS OF TERMS

auxiliary indicator. Any indicator other than the master weight totalizer indicating the weight of material that has been determined by scale.

belt conveyor. An endless moving belt for transporting material from place to place.

belt-conveyor scale. A device that employs a weighing element in contact with a belt to sense the weight of the material being conveyed and the speed (travel) of the material, and integrates these values to produce total delivered weight.

certified reference scale. The scale used to determine the weight of material used in an official test.

certifying authority. The jurisdiction(s) responsible for certifying the accuracy of belt-conveyor scales.

chart recorder. An element used with a belt-conveyor scale that continuously records the rate-of-flow of bulk material over the scale.

concave curve. A change in the angle of inclination of a belt conveyor where the center of the curve is above the conveyor.

convex curve. A change in the angle of inclination of a belt conveyor where the center of the curve is below the conveyor.

conveyor stringers. Support members for the conveyor on which the scale and idlers are mounted.

feeding mechanism. The means used to deposit material to be weighed on the belt conveyor.

head pulley. The pulley at the discharge end of the belt conveyor. The power drive to drive the belt is generally applied to the head pulley.

idler space. The center-to-center distance between idler rollers measured parallel to the belt.

idlers or idler rollers. Freely turning cylinders mounted on a frame to support the conveyor belt. For a flat belt the idlers consist of one or more horizontal cylinders transverse to the direction of belt travel. For a troughed belt, the idlers consist of one or more horizontal cylinders and one or more cylinders at an angle to the horizontal to lift the sides of the belt to form a trough.

loading point. The location at which material to be conveyed is applied to the conveyor.

master weight totalizer. An indicating element used with a belt conveyor scale to indicate the weight of material that was passed over the scale. The master weight totalizer is a primary indicating element of the belt-conveyor scale.

materials test. The test of a belt-conveyor scale using material (preferably that for which the device is normally used) as a reference standard, the weight of the material being determined on a certified reference scale.

minimum delivery. The least amount of weight that is to be delivered as a single weighment by a belt-conveyor scale system in normal use.

minimum totalized load. The least amount of weight for which the scale is considered to be performing accurately.

rated scale capacity. That value representing the weight that can be delivered by the device in one hour.

recording element. A device used to print on tickets, tape, or other papers, the weight of material that has passed over the scale in a given time. It may also be a primary element.

security means. A method used to prevent access by other than qualified personnel, or to indicate that access has been made to certain parts of a scale that affect the performance of the device.

simulated test. A test using artificial means of loading the scale to determine the performance of a belt-conveyor scale.

skirting. Stationary side boards or sections of belt conveyor attached to the conveyor support frame or other stationary support to prevent the bulk material from falling off the side of the belt.

tail pulley. The pulley at the opposite end of the conveyor from the head pulley.

take-up. A device to provide sufficient tension in a conveyor belt that the belt will be positively driven by the drive pulley. A counter-weighted take-up consists of a pulley free to move in either the vertical or horizontal direction with dead weights applied to the pulley shaft to provide the tension required.

test chain. A device used for simulated tests consisting of a series of rollers or wheels linked together in such a manner as to assure uniformity of weight and freedom of motion to reduce wear, with consequent loss of weight, to a minimum.

training idlers. Idlers of special design or mounting intended to shift the belt sideways on the conveyor to assure the belt is centered on the conveying idlers.

tripper. A device for unloading a belt conveyor at a point between the loading point and the head pulley.

weighment. A single complete weighing operation.

wing pulley. A pulley made of widely spaced metal bars in order to set up a vibration to shake loose material off the underside (return side) of the belt.

APPENDIX C

ELECTRONIC CASH REGISTERS (ECR)
INTERFACED WITH RETAIL MOTOR FUEL DISPENSERS

GENERAL INFORMATION

Lab Test:_____ Field Test:_____ Date:_____

Location:_____

SPECIFICATION REQUIREMENTS

Operating Manual

Schematics Submitted: Yes___ No___ Submitted: Yes__ No_

MANUFACTURER INFORMATION

Company Name:_____

Model of ECR:_____

Address:_____

_____

Telephone:_____

SYSTEM DESCRIPTION

Electronic Cash Register:

Stand Alone:_____
Central Processing Unit (CPU):____
Modular Components:_____
Microprocessor Technology:_____
UPC Scanning System:_____

INTERFACE ELEMENTS

Retail Motor Fuel Dispensers: Approved: Yes__No__
Manufacturer:_____
Model:_____

Electronic Weighing Element: Approved: Yes__No__
Manufacturer:_____
Model:_____

Comments:

ELECTRONIC CASH REGISTERS (ECR) INTERFACED WITH RETAIL MOTOR FUEL DISPENSERS

Examination Criteria

Identification G-S.1.

Each cash register must comply with the appropriate Handbook 44 identification requirements, and be permanently and clearly marked on a surface visible after installation and in the normal operating condition.

		Complies?
1.	The name, initials, or trademark of the manufacturer. A remote display displaying volume information is required to have the manufacturer's name or trademark and model designation.	Yes No N/A
2.	The manufacturer's designation that positively identifies the type or design.	Yes No N/A
3.	A nonrepetitive serial number. A remote display is not required to have a serial number because typically these devices do not have any electronics used in analyzing the signal received from the measuring element. Similarly, other elements of a system e.g. a printer, keyboard, cash drawer etc., which cannot be operated as a stand-alone unit or are not intended to be interfaced in a system of other models, are not required to have a serial number. Only the electronic element that controls the system is to be marked with a serial number.	Yes No N/A
4.	The marking must be visible after installation. Equipment is to be marked on a surface that is an integral part of the chassis and is visible after installation in a normal manner. If the information required is located on the back of the device, the same information must also appear on the side, front, or top. It may be installed on the housing, if the housing can be fitted with a security seal. The bottom of a device is not an acceptable surface.	Yes No N/A

Complies?

5. The marking must be permanent. It may be a metal or plastic plate attached with pop rivets or adhesive or other means. Removable bolts or screws are not permitted. A foil plate may be used provided it is destroyed in any attempt to remove it. Additionally, the printing on a foil plate must be easily read and not easily obliterated by rubbing with a relatively soft object (e.g., wood of a pencil). Yes No N/A

   NOTE: A location under a cover or inside a panel door is not acceptable. Visibility may be achieved by placing a duplicate serial number badge on the front, side, or top of the ECR. This badge may contain only the serial number if the other information is visible elsewhere on the ECR.
   Note: (This part may be changed dependent on Conference action)

Indicating and Recording Elements/General G-S.5.1.

1. Price Lookup Codes (PLUs)

   a. PLUs must operate only with the appropriate information; e.g., if a PLU activates a dispenser transaction, a volume input must be required before a price is computed and recorded. Yes No N/A

   b. Other PLUs must not interact with dispenser information. Yes No N/A

2. Manual volume entries other than pre-set amounts are not permitted. Yes No N/A

3. Incorrect entries shall be signaled by an audio and/or visual signal. Yes No N/A

4. A dispenser verification display (e.g., segment test) shall not be recorded by the ECR. Yes No N/A

Complies?

5. Power Interruptions. Test first with a power failure to the ECR alone, then a power failure to the dispenser alone, and, finally, a power failure to both components simultaneously. When a power interruption occurs the register must do one of the following:

   a. Continue to function and perform correctly either automatically or manually. Yes No N/A

   b. The transaction is halted and cannot be continued when power returns. Yes No N/A

   Note: (All indicated or recorded information must be correct).

   NOTE: The criteria for a power loss to a fuel dispenser are given in the retail motor fuel dispenser checklist.

6. An ECR shall be able to record all quantities, unit prices, and total prices up to the capacity of the dispenser. When the capacity of the quantity or total price is exceeded and the display "rolls over" the ECR shall not record the "rolled over" value and shall either record the correct total volume and total price, or give an error indication. Yes No N/A

7. A cash register shall not print the values from a dispenser until the delivery has been completed and dispenser turned off. Yes No N/A

8. Items Not Measured or Weighed. These items may be split-priced according to general marketing practices. Acceptable price extensions will depend on individual State policies. Normally, the single item price will be the multiple item price divided by the number of items and rounded up to the next higher cent. If the single item price is different than the price that would be computed as described, the price per item must be posted at the display. (SEE FPLA value comparison

Complies?

considerations and the Model Unit Pricing Regulation.) Suggested multiple item prices for test procedures are 3/$1.00 and 7/$1.00. The single item prices may be recorded as $.34, $.34, $.32 or $.34, $.33, $.33 and $.15, $.15, $.15, $.15, $.15. $.15, $.10 or $.15, $.14, $.14, $.15, $.14, $.14, $.14, respectively.

Price calculations for multiple item priced commodities shall be computed correctly as described above for:

a. Prices entered via PLUs. Yes No N/A

b. Prices entered through the keyboard Yes No N/A

Recorded Representations, Point-of-Sale Systems G-S.5.1.

A variety of sales receipt formats are acceptable provided they are clear and understandable. Guidelines are provided to assist manufacturers and weights and measures officials in determining the acceptability of formats. Symbols other than those given below may be acceptable but they will be reviewed on a case by case basis. More descriptive symbols and terms are acceptable.

1. The unit of measure shall be clearly defined. Acceptable symbols for units are: Gallon, GAL, G, Liter, and L. Upper or lower case is optional except a lower case "l" provided only if it does not look like a "1", e.g., a script ℓ.

   The unit of measure may be defined with either the quantity value; e.g., 10.000 GAL, or with the unit price; e.g., $1.119/Gal. It is not required with both. Yes No N/A

2. Acceptable designations of the unit price are: "@" as a prefix to the unit price value, an upper or lower case "X" or slash between the quantity and unit price, $/G, PPG (price per gallon), PPL (price per liter), UP (unit price), P/G, Price/Vol, PPU (price per unit), DOL/GAL Yes No N/A

Complies?

3. The total fuel price must be clearly distinguished from the other information in the fuel transaction. To identify the total fuel sale price, one of the following methods may be used:

   a. decimal point in the proper dollar position, e.g., XX.XX. If a dollar sign is not used, there must be at least one column offset of the least significant digit in recorded information, other than the sale price.

   b. the words gas, diesel, or other product designation may be used with the word "SALE"; e.g., "FUEL SALE" or "GAS SALE", or the product identification followed by the sale price; e.g., GAS 20.00.

Yes No N/A

4. When a service station cash register/console is capable of recording sales transactions of other products, the fuel transaction must be clearly distinguished from the other transactions. A "product class" must be associated with the fuel transaction as well as the other transactions. In terms of format, the fuel transactions may be separated (blocked-off) from the other transactions by blank lines or other designations above and below the fuel transactions or by at least one column off-set between the sales price and the other recorded information.

   The product class for fuel need only distinguish the fuel from other items. The product name, code number (similar to a price look up code), or a hose or pump number are acceptable designations of product class.

Yes No N/A

Example 1		Example 2	
Meat	3.89	Meat	3.89
Soda	2.99	Soda	2.99
Gas 5.080G @	1.000	Gas 5.080 G @	1.000
	5.08		5.08
Cig	1.00	Cig	1.00

NOTE: Product identification, date, and change due are not required by Handbook 44 to be printed on a printed ticket or a cash register receipt. The technical subcommittee recommends that Handbook 44 be amended to require product identification.

NOTE: These requirements apply to recorded representations resulting from a final sale. They do not apply to deposit slips for prepay transactions, etc.

TESTING IN THE PRESENCE OF RFI SOURCES

Equipment Required

One 460-MHz (commercial band) 4-watt, hand-held communicator.

One 27-MHz (citizens band) 5-watt, hand-held communicator.

Test

1. The testing is to be performed with the communicator antenna positioned one meter from the electronic equipment.

2. Operate the communicators individually, in accordance with FCC regulations, in the transmit mode while the device is in operation and after the completion of a delivery.

3. Scan the electronic equipment and interconnecting cables by repositioning the communicator, taking care to maintain a distance of one meter.

4. During the steps outlined in 2 and 3, evaluate the device performance.

The acceptable response is a change in the performance not greater than two cubic inches per five gallons and all indicated values must be correct.

FIELD EVALUATION AND PERMANENCE TESTS FOR MEASURING SYSTEMS

General

Measuring systems, devices, and elements whose performance may change in use over time are generally subject to field evaluation and permanence tests.

Field Evaluation

Certain types of devices and elements are subject only to a subsequent field evaluation after the initial field or laboratory evaluation. These are:

1. electronic indicating elements
2. consoles
3. recording elements
4. electronic cash registers
5. data processing units

A subsequent field examination is conducted after 20 and before 30 days of use in a normal installation. During this interval the device must not be serviced and must continually perform and function correctly.

Permanence Tests

Permanence tests are conducted on equipment such as a complete measuring system or only a measuring element (meter). The performance of the device is first determined during an initial field evaluation.

The minimum tests to be conducted are as follows:

On retail motor fuel dispensers -
five full flow and five slow flow tests of 5 gallons each
five full flow and five slow flow tests of 10 gallons each

On other metering systems; e.g., vehicle tank or loading rack -
three full flow tests
three intermediate flow tests
three slow flow tests
three vapor or air elimination tests.

Subsequent field evaluation tests consisting of the same minimum tests as outlined above are to be conducted as follows:

During the period between the initial tests and the subsequent tests, the equipment under test is not to be serviced or adjusted.

The subsequent tests on a retail motor fuel dispenser shall be conducted following the initial test after a period of 20 days in use and at least 20 000 gallons of product have been measured.

The subsequent tests on other metering systems shall be conducted following the initial test after a period of 20 days in use and an amount of product at least equal to the value obtained when multiplying the maximum rated flow rate of the equipment under test in terms of gallons per minute by 2000 has been measured.

Example: Meter flow rate - 25 to 125 gpm; 125 x 2000 = 250 000 gallons.

The results of all of these tests must be within the applicable acceptance tolerances.

APPENDIX D

EXAMINATION CHECKLIST - TAXIMETERS

General Code Requirements

G-S.1. Identification — Complies?

All equipment is clearly and permanently marked (requires the use of a tool in order to remove) on an exterior surface visible after installation with the following information:

1. Name, initials, or trademark of the manufacturer. Yes No N/A

2. The manufacturer's designation that positively identifies the pattern or design. Yes No N/A

3. The nonrepetitive serial number. Yes No N/A

G-S.2. Facilitation of Fraud

Electronic meters with multi-rate capabilities.

a. When used as a single-rate meter the other rates are inoperable or are all the same rate? There is only one rate available under all conditions of use. Yes No N/A

b. When used as a multi-rate meter, except shared-ride meters, it cannot be changed from one rate to another after the meter has been activated (i.e., put in hired - time on - or time off position). The rate cannot be changed once the fare cycle has been started. Yes No N/A

Short Term Power Interruptions

After a momentary (maximum of ten seconds) power interruption, the fare indication (fare and extras, if applicable) should either return to zero or display the fare indications displayed before the power failure assuming no change (a one-drop

increase in fare is permitted if a drop was anticipated in the period of interruption).

Test method: simulate power failure by pulling plug to power supply. Keep power interruption ten seconds or less. Restore power to device and record what happens. Repeat using off switch on power supply.

Power Plug

a.	Device returns to zero.	Yes	No	N/A
b.	Device returns to previously displayed fare (within limits as discussed).	Yes	No	N/A
c.	Device displays a meaningless display or error signal that requires operator intervention.	Yes	No	N/A
d.	Device displays an incorrect fare.	Does Not Comply	No	N/A

Power Switch

a.	Device returns to zero.	Yes	No	N/A
b.	Device returns to previously displayed fare (within limits as discussed).	Yes	No	N/A
c.	Device displays a meaningless display or error signal that requires operator intervention.	Yes	No	N/A
d.	Device displays an incorrect value.	Does Not Comply	No	N/A

Long Term Power Interruptions

After a power interruption of more than ten seconds, the fare indication (fare and extras if applicable) shall return to zero or give an error indication.

Power Plug

a.	Device returns to zero.	Yes	No	N/A
b.	Device returns to previously displayed fare.	Does Not Comply	No	N/A
c.	Device displays a meaningless display or error signal that requires operator intervention.	Yes	No	N/A
d.	Device displays some other fare.	Does Not Comply	No	N/A

Power Switch

a.	Device returns to zero.	Yes	No	N/A
b.	Device returns to previously displayed fare	Does Not Comply	No	N/A
c.	Device displays a meaningless display or error signal that requires operator intervention.	Yes	No	N/A
d.	Device displays some other fare.	Does Not Comply	No	N/A

G-S.3. Permanence

Equipment is of such materials, design, and construction that, under normal service conditions:

a.	Accuracy will be maintained,	Yes	No	N/A
b.	operating parts will continue to function as intended, and	Yes	No	N/A
c.	adjustments will remain reasonably permanent.	Yes	No	N/A

After preliminary laboratory evaluation, all devices must undergo a field evaluation. A field evaluation consists of an initial set of performance tests at the start of the evaluation and a second set of performance tests conducted 50 to 60 days after the initial tests. During this interval no adjustments or maintenance can be performed on the meter. Additional tests may be conducted during this interval. The results of all tests must be within acceptance tolerances.

G-S.4. Interchange or Reversal of Parts

Does not affect the accuracy of the device. Yes No N/A

G-S.5.1. Indicating and Recording Elements

Appropriate in design and adequate amount.

1. Are the maximum money values and quantity indications and unit prices appropriate for the intended use? Yes No N/A

2. Clear, definite, and accurate. Yes No N/A

3. Easily read under normal operating conditions? All indicators, annunciators, and legends are readable in the dark at distances up to one meter with no lighting other than that supplied by the device. Yes No N/A

4. Totalizer values accurate to the nearest minimum interval. Yes No N/A

5. Symbols for decimal point clearly identify the decimal position. (Generally acceptable symbols are dots, small commas, or x.)

G-S.5.2. Graduations, Indications, and Recorded Representations

G-S.5.2.1. Analog

Suitable graduations and an indicator designed to advance continuously? Yes No N/A

G-S.5.2.3. Size and Character

1. Corresponding graduations and units uniform in size and character. Yes No N/A

2. Subordinate graduations, indications, and recorded representations appropriately portrayed or designated. Yes No N/A

G-S.5.2.4. Values Defined

Are the values adequately defined by a sufficient number of figures, words, symbols, or combinations thereof, uniformly placed, and conducive to reading accuracy? Yes No N/A

G-S.5.2.5. Permanence

Graduations, indications, or recorded representations and their defining figures, words, and symbols are of such character that they will not tend easily to become obliterated or illegible. Yes No N/A

G-S.5.3. Values of Graduated Intervals or Increments

Uniform throughout any series. Yes No N/A

G-S.5.4. Repeatability of Indications

When a digital indicator is tested, the delivered quantity shall be within tolerance at any point within the range of the indicated amount. Yes No N/A

G-S.5.6. Recorded Representation

All recorded values are digital (See also UR.3.3.) Yes No N/A

G-S.5.7. Magnified Graduations and Indications

Shall conform to all requirements for graduations and indications. Yes No N/A

G-S.6. Marking, Operational Controls, Indications, and Features

Shall be clearly and definitely identified. Yes No N/A

G-S.7. Lettering

Required marking and instructions of passenger interest are permanent, distinct, and easily read. They are readable in the dark at a distance up to one meter from the device with no lighting other than that supplied by the device. Yes No N/A

G-UR.1.1. Suitability of Equipment

Is the equipment suitable for intended service with respect to elements of its design? Yes No N/A

G-UR.1.2. Environment

Suitable for environment of its intended use, including hostile weather and electromagnetic and radio frequency interference. Yes No N/A

Electromagnetic and radio-frequency interference generated by electromechanical equipment, portable hand-held radio transmitters, citizens band transmitting equipment, the printer, etc. shall not affect accuracy. NCWM/SMA RFI/EMI Field Test Procedures to be used where applicable with test distance of 15-30 cm from the device and its components instead of one meter.

Taximeter Code Requirements

S.1. Design of Indicating and Recording Elements and of Recorded Representations

S.1.1. Primary Elements

S.1.1.1. General

The device is equipped with a primary indicating element and may also be equipped with a primary recording element. Yes No N/A

S.1.2. Advancement of Indicating Elements

Indicating elements are susceptible of advancement only by the rotation of the vehicle wheels or by the time mechanism (except when the meter is being cleared). Yes No N/A

S.1.3. Visibility of Indications

1. The fare and extras are clearly visible at all times (except when the meter is cleared). All customer indications (fare and extras) and markings (i.e., monetary signs, dollars, cents, hired, time-off, etc.) are easily read in the dark or in bright sunlight from a distance of 1 meter from the device. Such indications and markings are easily read at a distance of 1 meter in total darkness with no other light than what is supplied by the device. In a like manner, such indications are also easily read at a distance of 1 meter

when the face of the device is illuminated with a 150-watt reflector floodlight (2750 lumens) from a distance of 1 meter. Yes No N/A

2. The indications are at least 10 mm high for the fare and 4 mm high for all other indications. Yes No N/A

S.1.4. Actuation of Fare-Indicating Mechanism

1. The fare-indicating mechanism is actuated by the distance mechanism whenever the vehicle is in motion at such a speed (cross-over speed) that the rate of distance revenue equals or exceeds the time rate. Yes No N/A

2. The fare-indicating mechanism is actuated by the time mechanism whenever the vehicle speed is less than the cross-over speed and when the vehicle is not in motion. Yes No N/A

3. Means are provided for the vehicle operator to render the time mechanism either operative or inoperative with respect to the fare-indicating mechanism. Yes No N/A

S.1.5. Operating Condition

S.1.5.1. General

1. Whenever the indicating elements of a taximeter are set to indicate a charge for the hire of the vehicle, the character of the fare indication is clearly shown on the taximeter face. Yes No N/A

2. When a taximeter is cleared, the indication "not registering", "vacant", or an equivalent expression is shown. Yes No N/A

S.1.5.2. Single-Tariff Taximeter

When set to register charges, the indication "registering", "hired", or an equivalent expression is shown. Yes No N/A

S.1.5.3. Multiple-Tariff Taximeter

When set to register charges, the basis for the particular rate for which it is set is shown. (The indication "registering", "hired", or an equivalent expression may be shown for the lowest rate. For any rate other than the lowest, the rate actually being charged is shown). Yes No N/A

S.1.5.4. Time Not Recording

When the taximeter is set for fare registration, but with the time mechanism inoperative, the indication "time not recording" or an equivalent expression appears. (This indication may replace the indication specified for a single-rate meter and for the lowest rate on a multi-rate meter, but shall be in addition to the indication specified for the higher rates on a multi-rate meter.) Yes No N/A

S.1.6. Fare Identification

Fare indicators are identified by the word "fare" or by an equivalent expression. Values are defined by suitable words or monetary signs and decimal points (i.e., dollars, cents, $1.20, etc.). Values defined by words have a separation between dollars and cents. Yes No N/A

S.1.7. Fares

1. Extras are indicated as a separate item and are not included in the fare indication. Manually operated means, (such as depressing a key) may be provided to temporarily display the combined total fare, provided that the indication returns to the display of separate values within five seconds, after the means are released.

2. They are identified by the word "extras" or by an equivalent expression. Yes No N/A

3. Values are defined by suitable words or monetary signs. Yes No N/A

S.1.7.1. Nonuse of Extras

If extras are not used, the extras mechanisms are made inoperable or the extras indications are effectively obscured by permanent means. Yes No N/A

S.1.8. Protection of Indications

Indications of fares and extras are displayed through a protective glass or other suitable transparent material securely attached to the meter housing. Yes No N/A

S.2. Basis of Fare Calculations

Taximeter fares are calculated upon the basis of:

1. Distance traveled, Yes No N/A

2. Time elapsed, or Yes No N/A

3. A combination of 1 and 2. Yes No N/A

S.3. Design of Operating Control

S.3.1. Means of Control

Lever-arms, knobs, handles, push buttons, or other convenient and effective means are provided to set the meter mechanism for the desired operating condition and to "clear" the meter. Yes No N/A

S.3.2. Positions of Control

1. For mechanical meters. The several positions of the control lever knob or handle are mechanically defined. Displacement from any one of these positions is sufficiently obstructed that accidental or inadvertent changing of operating condition of the meter is improbable. Yes No N/A

2. For electronic meters. The several positions of the control lever knob and/or push button switches are properly identified. Yes No N/A

3. Movement of this control to an operating position immediately following its movement to the cleared position or the operation of the push buttons is automatically delayed enough to permit the meter mechanism to come to complete rest in the cleared position. Yes No N/A

S.3.3. Flag

Mechanical Meters. If the operating control is a lever-arm and flag, the flag is at its highest position when the taximeter is cleared, and in this position, the whole flag is above the level of the meter housing. Yes No N/A

S.3.4. Control for Extras Mechanism

The means provided to actuate the extras mechanism is inoperable whenever the meter is cleared. Yes No N/A

S.4. Interference

There is no interference between the time and the distance portions of the meter at any speed of operation corresponding to a vehicle speed faster or slower than the speed at which the basic rate of distance revenue equals the basic waiting-time rate (cross-over speed). At speeds greater than the cross-over speed, the registration of the meter in the "hired" condition shall agree with its performance in the "time not recording" condition within one percent. At speeds slower than the cross-over speed, the registration of the meter in the "hired" condition is within acceptance tolerances for time. Yes No N/A

S.5. Provision for Security Seals

Adequate provision is made for affixing security seals to the meter and to other parts of the meter that affect the accuracy or indications of the device. The means provided are readily accessible without removing or disassembling the meter. To remove or disconnect the meter, it is necessary to break a security seal. Yes No N/A

Conducted by _____ Date _____

REPORT OF THE COMMMITTEE ON EDUCATION, ADMINISTRATION, AND CONSUMER AFFAIRS

Thomas F. Geiler, Chairman
Sealer of Weights and Measures, Town of Barnstable, MA

REFERENCE KEY

400 INTRODUCTION

The Committee on Education, Administration, and Consumer Affairs submitted its report to the 70th Annual Meeting of the National Conference on Weights and Measures (NCWM). The report consisted of the Interim Report as offered in the Conference Announcement and as amended by Addendum Sheets developed during the Annual Meeting.

The Reference key number and title of the voting item are identified in bold face print on Table A. All other items are informational and required no formal action of the membership.

Table A
REFERENCE KEY ITEMS

Reference Key Number	Title of Item
401	National Weights and Measures Week
402-1	Reports from Regional Education Committees
402-2	Directors Roundtables
403	Report to the NCWM Executive Committee
404-1	Status Report, Training Program
404-2	**Uniform Administrative Procedures for Certification of Weights and Measures Officials**

After the one voting item was adopted, the Report was adopted in its entirety by a hand vote of the membership.

VOTING ITEM

Formal action (vote) of the NCWM was requested on the following item:

404-2 Uniform Administrative Procedures for Certification of Weights and Measures Officials

This item was adopted (State Representatives 44 Yea; 0 Nay: Delegates 87 Yea; 0 Nay).

DETAILS OF ALL ITEMS FOLLOW IN NUMERICAL ORDER.

401 NATIONAL WEIGHTS AND MEASURES WEEK

Peggy Adams, Co-Chairman of National Weights and Measures Week, reported that a permanent handbook to assist weights and measures officials in planning events for the week was published as NCWM Publication #7. Weights and Measures coordinators received the publication in time to plan 1985 activities.

Arrangements are being made to coordinate the 1986 National Weights and Measures Week activities with the 150th anniversary celebration of the Office of Weights and Measures.

Although the attempt to obtain a presidential proclamation for weights and measures week 1985 was unsuccessful, efforts will continue for next year.

A slide presentation and narrative for weights and measures speaking engagements will be completed soon by Peggy Adams.

The Committee would like to thank industry for its participation in and support of Weights and Measures Week 1985.

REGIONAL WEIGHTS AND MEASURES ACTIVITIES

402-1 REPORTS FROM REGIONAL EDUCATION COMMITTEES

The committee reviewed the following reports:

1. The final report of the Education, Administration, and Consumer Affairs Committee to the Western Weights and Measures Association (September 1984)

2. The final report of the Education Committee to the 39th Annual Conference of the Southern Weights and Measures Association (October 28 -November 1, 1984).

3. The final report of the Committee on Education, Administration, and Consumer Affairs to the Northeastern Weights and Measures Association (April 1985).

The Committee agreed to include in its report, as an informational item, a copy of a document entitled "Professionalism in Weights and Measures" that was an attachment to the Western Education Committee's report (see Appendix A). This document contains guidance to weights and measures officials on how to maintain a professional image when interacting with the public.

402-2 DIRECTORS ROUNDTABLES

The four regional weights and measures associations have held Directors Roundtables at their annual meetings. The Committee has received information indicating that all associations have been pleased with the results of the roundtables and plan to continue to hold them. The Committee encourages this activity and requests that participants write summaries of any discussions that might be of national interest and submit them to the Committee for appropriate distribution.

403 REPORT TO THE NCWM EXECUTIVE COMMITTEE

In a joint meeting with the NCWM Executive Committee, the Committee on Education, Administration, and Consumer Affairs announced the publication of the first training module developed for the National Training Program: Module 27, "Introduction to Electronic Weighing and Measuring Systems." The Committee described its plans to distribute one complimentary copy of the module to each of the 50 States. To make it possible for the States to obtain additional copies or for industry and other interested groups to obtain copies of the module, the Education Committee recommended that the NCWM make arrangements to sell copies of Module 27 and future modules at a cost calculated to recover the material and labor costs associated with module production. The Committee estimated that the cost of issuing most of the modules on device examination would be about $50 ($20 for each Inspector's Manual, $30 for the Instructor's Manual). It was suggested that Module 27, which is one of the shorter courses, be offered for sale at a cost of $10 for each Inspector's Manual and $15 for each Instructor's Manual. (The higher cost of the Instructor's Manual results from the cost of the slides contained in the manual.)

The Committee reported that it was working on procedures to provide for the certification by the NCWM of officials who successfully complete device or package checking training in accordance with the NCWM's training modules. The procedures would include provisions to permit representatives of the Education Committee to audit the training programs of States participating in the certification program to determine if they meet program requirements. It was explained that this activity was separate from the more comprehensive program evaluation activity carried out by the Committee in the past. The Committee said that it hopes to resume program evaluation in the future.

NATIONAL TRAINING PROGRAM

404-1 STATUS REPORT

The following represents the status of all training modules under development as of July 1985.

Module 1, Mechanical Retail Computing Scales - The module has been revised to reflect changes in the Handbook 44 new Scales Code that will go into effect on January 1, 1986. Issuance of the module is scheduled for November 1985.

Module 2, Electronic Retail Computing Scales - This module was revised to conform to the new Scales Code. The module was field tested by Connecticut and Nebraska and reviewed by the NCWM S&T Committee. It is scheduled for issuance in November 1985.

Module 3, Bench, Counter, and Hanging Scales - A draft of this module was received from the Working Group. The draft is now being reviewed by members of the Education Committee.

Module 4, Dormant and Industrial Medium Capacity Scales -The new Working Group for this module plans to deliver a draft to the Education Committee in January 1986.

Module 5, Vehicle and Axle-Load Scales - A revised Contractor's draft incorporating new Scales Code information is due September 30, 1985.

Module 6, Monorail Scales and Meat Beams - The module was field tested by Ohio. A new draft incorporating the changes resulting from the field test and information on the new Scales Code is due at the end of July 1985.

Module 7, Livestock and Animal Scales - A revised Contractor's draft is due August 30, 1985.

Module 8, Retail Motor Fuel Dispensers and Consoles -Chapters 5-8 of this module were delivered by the Contractor to members of the Education Committee. The field test of the module is scheduled to begin in August 1985.

Module 10, Checking the Net Contents of Packaged Goods -A field test of this module was conducted in New Mexico by OWM staff. The completed module is due in August 1985.

Module 11, Prescription and Jewelers' Balances - A draft of this module is being prepared by the Working Group.

Module 13, Hopper Scales - A draft of this module is being prepared by the Working Group.

Module 19, Loading Rack Meters - The Working Group is preparing the first draft of this module.

Module 20, Vehicle Tank Meters - The Contractor's draft of this module is due July 31, 1985.

Module 21, Liquefied Petroleum Gas Liquid Meters - A draft is being prepared by the Working Group.

Module 23, Weights and Measures Administration - OWM is rewriting portions of this module.

Module 27, Introduction to Electronic Weighing and Measuring Systems - Copies of this completed module are available from the NCWM.

Joan Koenig reported that the National Bureau of Standards has approved a one-year extension of the NCWM's grant with additional funding of $100,000. She also reported that the NCWM plans to copyright the training modules being produced under the National Training Program; however, weights and measures jurisdictions wishing to reproduce the modules for their own training purposes may request permission to do so from the NCWM. Mrs. Koenig announced that a National Training Program Registry had been established with the ACT (American College Testing Program) National Registry Service to provide a permanent record of courses taken by weights and measures officials under the training program.

404-2 UNIFORM ADMINISTRATIVE PROCEDURES FOR CERTIFICATION OF WEIGHTS AND MEASURES OFFICIALS

In its final report to the 69th National Conference, the Committee included a draft of administrative procedures for the certification of weights and measures officials under the National Training Program, prepared by Joseph Swanson and Marvin Reiger of Alaska. These procedures provide a mechanism by which the NCWM may certify the competence of a weights and measures official to inspect and test weighing and measuring devices and to verify the net contents of packaged goods in accordance with the uniform laws and regulations adopted by the NCWM. As specified in the procedures, States wishing to participate in the certification program must agree to provide training in accordance with and utilize the training modules published by the NCWM, provide information on training to the NCWM's National Training Program Registry, establish a training file on each participant, make information in these files available to representatives of the Education Committee upon request, and submit an annual report on training activities to the Committee.

The Committee discussed and modified the draft procedures at its interim meeting. A revised version is contained in Appendix B. The Committee recommends adoption of these procedures.

T. F. Geiler, Barnstable, Massachusetts, Chairman

S. J. Darsey, Florida
C. H. Greene, New Mexico
B. R. Niebergall, North Dakota
P. A. Stagg, Louisiana

J. A. Koenig, NBS, Technical Advisor

APPENDIX A

PROFESSIONALISM IN WEIGHTS & MEASURES

1. Purpose. The purpose of this instruction is to provide guidance for personnel to follow in their behavior with the public.

2. General.

a. Image Building. The single most important image building factor for Weights and Measures is the individual staff member. It is you, the staff of Weights and Measures, and your behavior toward the public that is our front line, our first and most lasting impression on the public. Consequently, everyone you meet or interact with, publicly or privately, is part of our public. Whether it's a private individual on the phone, the head of a company, or a gas pump attendant, all conversations or actions that are part of your daily life are also part of the Weights and Measures image. Each member of the staff must be aware of this and must see his or her actions in this context. You personally represent Weights and Measures in all your actions.

b. Professional Image Projection. No one will believe that we are doing a good, professional job unless we project that image in every interaction. For example, if you threaten someone with a warning before you have solid proof, you cannot expect the general public to believe you are acting fairly and in the interest of equity. You cannot use your position as a member of the staff of Weights and Measures to harass an obstinate store manager or gas station attendant. We expect people to cooperate with us because accurate weights and measures are in their best interest. If a store manager shows lack of courtesy or cooperation, harassment by an inspector will not improve the situation.

c. Behavior as a Private Person. Remember, too, that your behavior as a private person reflects on the Weights and Measures public image. You are in a very special position of having regulatory control over some aspects of the State's economy. You cannot misuse that power for your private, personal ends. You must separate your professional authority from your personal life.

d. Servicing the Public. Servicing the public is frequently a great effort for little immediate reward. There is little thanks given for dealing with irate phone calls, and inspections tend to blur into one. A great help in dealing with the public is to remember that however often you have had to deal with a particular problem or complaint, it is usually a new problem for the person

on the other side. The ability to treat each complaint or inspection as an individual case, unique for the person complaining or being inspected, helps keep the Weights and Measures image bright and shiny for each individual member of the public who encounters Weights and Measures.

e. Essential Points. The three essential points to remember are:

1) Each staff member should be aware of his or her part in projecting the Weights and Measures image.

2) Our powers are a public trust and not to be used for personal emotional satisfaction.

3) Each case, complaint, or interaction of any sort is a new experience for each individual member of the general public who comes in contact with the Weights and Measures Division.

3. Violations. There are many ways in which an inspector can confront someone who has broken a rule, regulation, or the law. However, some methods of approach are far better than others and will better establish a cooperative relationship with the other person in a regulatory procedure. Please follow these suggestions:

a. Dealing in Commodities. Of greatest importance, you should not become emotional. Remember that you are dealing in commodities, not in people, with respect to violations. Do not become a "badge happy" inspector, thus forgetting that most people wish to comply with the law.

b. Commodity or Device in Violation. If in doubt whether or not there is a violation, contact your supervisor.

c. Courtesy. Be courteous at all times to any person when you are issuing a warning, etc. Nothing will ever be gained by becoming emotional and losing your composure. Any objectionable action on your part will be held against you as a State official if the case should go to court.

d. Arguing. Occasionally, the persons to whom you are issuing the legal notice may become abusive. Let them talk until they have finished. Do not argue with them. Go about your business and fill out the form in a courteous and businesslike manner.

e. Handling an Abusive Situation. In the event a person becomes too abusive or unmanageable, simply state that you have no choice except to summon the assistance of the nearest police officer. Announce that you will take necessary action. However, as soon as you leave this person when the situation becomes unmanageable, call your immediate supervisor, relate what has occurred, and seek advice. If your supervisor is not available, use your best judgment. Normally, if you remain courteous in the face of trying situations, you can get the job done effectively. The person involved will often apologize, at a later date telling you that they just lost their temper. Your good behavior is usually the key to how a situation will develop or terminate. After contending with an abusive situation, be sure that you are self-controlled prior to your next inspection. Do not make the next person pay for any anger toward the predecessor.

f. Summary. In summary, remember that any inspection could possibly turn into a court case; act accordingly by preparing clear and concise reports. You must be observant and list all pertinent information needed to supply proper evidence in a court of law, including (but not limited to) day and time of inspection and names of persons involved. If the inspection is going to warrant court action, take a few minutes after leaving the premises to write a brief narrative of what occurred. This will help refresh your memory later.

g. Answer Questions. Be perfectly willing to answer any questions resulting from an inspection in a courteous manner.

h. Discussing Scheduling. Remember, an inspector does not normally discuss proposed or current scheduling with members of industry unless specified in departmental policy.

4. Inspections and Testing. The inspection and testing will usually be made during routine inspections or investigations. Inspections will usually be made without advance notice, unless specified otherwise in departmental policy. The following is the testing procedure:

a. Identification and Purpose. Identify yourself and state the purpose of your visit to the individual in charge.

b. Assistance. If required, inform the person in charge of his responsibility to provide assistance and any special equipment.

c. Equipment. Set up test equipment.

d. Visual Examination. Make visual examinations.

e. Test. Conduct test in accordance with the appropriate Examination Procedure Outline (EPO).

f. Review. At the conclusion of the test, review findings with the person in charge and explain fully your actions and the law upon which they are based. At the concluson of the review, ensure that the manager or other peson in authority signs your report.

APPENDIX B

NATIONAL CONFERENCE ON WEIGHTS AND MEASURES UNIFORM ADMINISTRATIVE PROCEDURES FOR CERTIFICATION OF WEIGHTS AND MEASURES OFFICIALS

I. Purpose

These procedures provide a mechanism by which the National Conference on Weights and Measures (NCWM) may certify the competence of weights and measures officials to inspect and test weighing and measuring devices and to verify the net contents of packaged goods in accordance with the uniform laws and regulations adopted by the NCWM.

II. Goals

The goals of the program are twofold:

1. to encourage uniform enforcement of weights and measures laws and regulations within the NCWM member jurisdictions, and

2. to provide national recognition of weights and measures officials who successfully complete training under the NCWM's National Training Program, through issuance of an NCWM certificate and awarding of Continuing Education Units (CEUs).

III. Award of Certificate

A certificate will be awarded to each individual who: (1) successfully completes a National Training Program module for which certification is offered and (2) is recommended for certification by the State certifying officer. Certificates will be awarded only to individuals in States having a current Letter of Agreement with the NCWM.

The certificate will be verified by the signatures of the State official responsible for weights and measures enforcement and the Chairman of the NCWM.

IV. Letter of Agreement

States wishing to participate in the NCWM certification program must sign a "Letter of Agreement" (see Attachment 1) stating that they will train officials in accordance with and utilizing the NCWM's training modules and adhere to the "Uniform Administrative Procedures For Certification of Weights and Measures Officials." Signed Letters of Agreement should be sent to the Executive Secretary of the NCWM, who will have the Conference Chairman countersign the agreement. A copy will be returned to the designated State certifying officer.

V. Procedures

A. Responsibilities of the State certifying officer:

1. Provide training in accordance with the instructor's manual in each individual training module.

2. Submit information on all individuals successfully completing NCWM training courses to the NCWM's National Training Program Registry. Upon an individual weights and measures official's successful completion of a training module for which certification is available, submit the name of the official and attest that the official has completed the required training and is fully qualified to perform the procedures within the specific module.

3. Establish a training file on each participant to include:

   a. schedule of training;
   b. test scores;
   c. evaluation of training;
   d. letter to the NCWM Executive Secretary requesting participant's certification;
   e. copy of certificate issued by the NCWM; and
   f. copy of the information sent to the National Training Program Registry.

4. Make information in the training file available to representatives of the NCWM Committee on Education, Administration, and Consumer Affairs upon request. (To be referred back to the Committee for consideration.)

5. By January 15 of each year, submit an annual report on the jurisdiction's training activities during the previous calendar year to the Committee on Education, Administration, and Consumer Affairs. The report shall include:

   a. Attestation that all training records are current and in accordance with the "Uniform Administrative Procedures for the Certification of Weights and Measures Officials."

   b. Attestation that training was provided in accordance with the Instructor's manual for each module for which a certificate was issued.

   c. Names and titles of individuals performing training.

   d. Attestation that individuals holding certification with respect to an individual module have received information on any changes in the module in the previous calendar year.

   e. Number of individuals receiving training during the past calendar year and number of individuals receiving certificates during the past year.

B. Responsibilities of the Executive Secretary of the National Conference on Weights and Measures:

1. Issue an NCWM Certificate signed by the Conference Chairman for each weights and measures official for whom he receives an attestation of successful completion of a module from the participating jurisdiction's certifying officer.

2. Maintain, in alphabetical order of participating jurisdictions, a roster containing the name of the certifying officer for each jurisdiction and the name of each official who has received certification, identifying the modules for which certified.

3. Submit a report each year to the NCWM Committee on Education, Administration, and Consumer Affairs at the interim meeting, listing the participating jurisdictions, the certifying officers, and the number of certificates issued in the previous calendar year.

C. Responsibilities of the NCWM Committee on Education, Administration, and Consumer Affairs:

1. Review the annual reports of the certifying officers to assure compliance with these procedures.

2. Request Office of Weights and Measures staff and officers and standing committee members of the National Conference on Weights and Measures who are visiting participating jurisdictions to review files and procedures and to report any variances to the Committee. (To be referred back to the Committee for reconsideration.)

3. Instruct the Executive Secretary to remove a jurisdiction from the active list of participating jurisdictions and withhold issuance of all certificates whenever the Committee determines that the jurisdiction fails to comply with the requirements of the certification program.

4. Report annually to the NCWM on the status of the certification program.

ATTACHMENT 1

SAMPLE LETTER OF AGREEMENT

The (Name of State) will participate with the National Conference on Weights and Measures in the training of weights and measures officials.

The (Name of State) agrees to:

1. Train its officials in accordance with, and utilizing the training modules published by, the National Conference on Weights and Measures.

2. Adhere to the procedures of the "Uniform Administrative Procedures for the Certification of Weights and Measures Officials."

3. Have the undersigned serve as a certifying officer in accordance with the "Uniform Administrative Procedures for the Certification of Weights and Measures Officials."

_____ _____

Date

(Signed by individual responsible for weights and measures enforcement in the State).

Accepted by the National Conference on Weights and Measures:

_____ _____

Signature of Chairman Date

REPORT OF THE COMMITTEE ON LIAISON

N. David Smith, Chairman
Director, Standards Division
North Carolina Department of Agriculture

REFERENCE KEY

500 INTRODUCTION

The Committee on Liaison submitted its Report to the 70th Annual Meeting of the National Conference on Weights and Measures (NCWM). The report consisted of the Interim Report as offered in the Conference Announcement and as amended by Addendum Sheets developed during the Annual Meeting.

After its component items were discussed and amended, the Report was adopted in its entirety by hand vote of the membership.

The Report contains the recommendations of the Committee formed on the basis of written and oral comments received during the year.

REFERENCE KEY ITEMS CONTAINED IN THE REPORT

The listing below of all of the items contained in the report is provided for clarity. All of the items are informational and required no formal action of the membership.

501	Federal Agency Activities
501-1	Federal Grain Inspection Service
501-2	Net Weight
501-3	Aerosol Net Weight Labeling
501-4	Random Pack Quantity Statements to 0.001 lb
501-5	Federal Role in Net Wet Compliance
501-6	Credit Card Surcharge
502	Public Liaison
503	OIML Status Report
504	OWM Program
505	Railroad Freight Car Stenciled Tare Weights
506	Polyethylene Sheet Products
507	OWM, 150th Anniversary
508	Task Force on Motor Fuels
509	Task Force on Package Control

DETAILS OF ALL ITEMS FOLLOW IN NUMERICAL ORDER

REFERENCE KEY

FEDERAL AGENCY ACTIVITIES

501-1 FEDERAL GRAIN INSPECTION SERVICE

Mr. Ben Banks, Industrial Specialist, reported that 1984 was a successful year for the Federal Grain Inspection Service (FGIS) railroad track scale testing program. As reported to the 1984 NCWM, the FGIS implemented a new routing plan for the test cars, and this plan has proven to be more efficient. The 1984 activities were as follows:

- Fourteen of the 15 master scales were tested. The Norfolk and Western Master Scale at Roanoke, Virginia, was taken out of service for repairs.

- Sixty scale tests were conducted on 40 railroad track scales used for official weighing of grain.

- Sixteen railroad-owned scales and five other industry scales were tested.

- Five railroad-owned scale test cars were field calibrated and two railroad scale test cars (long wheel base) were field calibrated for the Washington-Oregon Public Utilities Commission.

- Four sets of LoDec wheel-load weighers were tested for the City of New York on a cost reimbursement basis.

- Twenty-five railroad-owned scale test cars, representing eight railroads, 20 10,000-pound test weights (Class "F" tolerance), and 16 2,500-pound weights were calibrated at the FGIS Master Scale Depot, Clearing, Illinois.

- The FGIS cooperated with the Office of Weights and Measures by supplying historical data used by OWM in withdrawing Report of Test No. 248.

- A revision of the FGIS scale regulations has been completed and the appropriate sections of Handbook 44 have been recommended for adoption by reference.

The Committee was reminded by Mr. Banks that FGIS is responsible for the testing of railroad track scales used in the official weighing of grain. All other scale test requests are secondary and must be performed on a total cost recovery basis. The Committee was interested in how many testing requests were received that FGIS could not honor. Mr. Banks indicated that next year's report will contain this information.

501-2 NET WEIGHT

On August 1, 1980, the Department of Agriculture (Food Safety and Quality Service) and the Department of Health and Human Services (Food and Drug Administration) published proposals to update their net weight labeling regulations. A comment period for public comment was open from August to November 6, 1980.

The purpose of their proposals was to identify areas where agreement could be reached by the groups that have an interest in improving net weight regulations and to seek information in areas where such agreement was not reached. Additional information was sought in the area of the definition of a suitable tare -- dry, wet, or drained weight, and in the area of moisture allowance during the distribution process. Eighty-five comments were received covering a number of areas and expressing differing views.

These comments were predominantly from industry and State and local governments. Almost all of the comments either disapproved of the proposal or suggested major revisions. Many comments asserted that the proposed regulations were unnecessary because no chronic short weight problem for food commodities has existed for more than a decade. Some of these comments added that, in the absence of such a problem, combined with the lack of widespread consumer support for the proposed regulations, a change in the regulations is not needed.

At this time, neither Department has indicated a willingness to publish a final regulation or to withdraw the outstanding proposal. However, both Departments are represented on the NCWM Task Force on Commodity Requirements, along with State weights and measures officials, industry representatives, and a representative from the U.S. Office of Consumer Affairs. This task force is charged with proposing a method of dealing with the issue of moisture loss in meat, poultry, and flour. Representatives from both Departments reported that the net weight proposals would not be acted upon before the task force completed its work. The task force will issue a status report to the Executive Committee.

501-3 AEROSOL NET WEIGHT LABELING

In May 1979, the National Conference on Weights and Measures petitioned the Food and Drug Administration (FDA) to require net weight labeling on all aerosol containers. In June 1981, the FDA notified the Committee on Liaison that its proposed action on the petition would be published in the Federal Register. In 1983, the FDA repeated its intention to publish its proposed action in the Federal Register. In 1984, the Committee on Liaison was again advised that final action was still pending. At the 1985 Interim Meeting, the Committee on Liaison was advised that no further effort was being made to publish or act on the NCWM's petition on aerosol net weight labeling.

Since the Conference still has an interest in having the proposal published, the Committee initiated efforts to reactivate the Conference's petition to FDA to change its aerosol labeling regulations. Through correspondence to FDA from NCWM Chairman, Ezio Delfino, the Conference requested this action in April 1985. A reply in May 1985 from FDA's John M. Taylor, Director, Office of Compliance, Center for Food Safety and Applied Nutrition, indicated that the files on this petition have been recalled and updated and that the petition is now an active matter.

501-4 RANDOM PACK QUANTITY STATEMENTS TO 0.001 LB

In June 1983, the Committee on Laws and Regulations (L&R) notified the U.S. Department of Agriculture (USDA) and the Food and Drug Administration of its intention to amend Handbook 130, "Uniform Laws and Regulations," Packaging and Labeling Regulation to allow weight declarations to be carried out to three decimal places. The purpose of this notification was to stress the Conference's desire for regulatory uniformity in light of the Federal agencies' requirement of two decimal places. Both agencies responded to the effect that they have not received sufficient evidence of consumer benefit to warrant changing the regulations to allow three decimal places.

In 1984, the Packaging and Labeling Regulation in Handbook 130 was amended to allow the prescribed units of random packages less than one pound to be carried out to three decimal places. In light of this amendment and the fact that Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices," permits commercial weighing devices to indicate increments finer than 0.01 pound, the NCWM Committee on Liaison has initiated action requesting both USDA and FDA to officially recognize these developments and permit such labeling under their regulations. Correspondence in July 1985 from NCWM Chairman, Ezio Delfino, to John M. Taylor, FDA, and John McCutcheon, USDA, explained these developments to the Federal agencies and urged them to take action to permit random weight label declarations to three decimal places.

501-5 FEDERAL ROLE IN NET WEIGHT COMPLIANCE

During the Interim Meeting, the Committee on Liaison heard a presentation by USDA and FDA on their forms of inspection and the different types of compliance system used by these two Federal agencies. The differences are due to the types of product each agency inspects and to the different form of the laws that each agency enforces. For example, the FDA inspection of food products is aimed at finding products that are not in compliance with the Federal law that requires that food products be wholesome, unadulterated, and not misbranded. The FDA system employs investigators to find and remove products that do not meet Federal standards.

The Federal inspectors for USDA are required to assure the public that meat and poultry products are wholesome, unadulerated, and not misbranded. To accomplish its mission, the USDA assigns food inspectors to all meat and poultry processing plants on a full-time basis to ensure that products meet the Federal standards. The difference between the two systems is further identified by the Federal seal on all meat and poultry products that indicates that the product was inspected and passed by USDA.

These Federal systems, along with the concept of Federal preemption defined through past legal cases, have a profound influence on the role of State and local systems as they enforce their weights and measures laws. This concept of Federal preemption and the idea of concurrent jurisdiction provide opportunities for conflict and confusion if each enforcement agency does not understand the basis and needs for enforcement by the Federal system and by the States and local agencies.

During the Interim Meeting, it seemed obvious to the Committee members that better communication between the Federal regulators and the State and local agencies could improve enforcement efforts by both systems. Therefore, the Committee organized a program session with presentations by USDA and FDA at the General Session of the 1985 Conference.

John M. Taylor, Director, Office of Compliance, Center for Food Safety and Applied Nutrition, FDA and John W. McCutcheon, Deputy Administrator, Food Safety and Inspection Service, USDA made presentations at the 1985 General Session, followed by a question and answer period. Copies of their presentations are included in Appendix F.

501-6 CREDIT CARD SURCHARGE

In 1983, the NCWM voted to support dropping the credit surcharge prohibition when it expired. The Committee on Liaison had urged the Conference to adopt this position because of the effect of the credit surcharge ban on the orderly dispensing of motor fuels at retail through single-price computing pumps.

The ban on the credit card surcharge prohibition in the Cash Discount Act expired on February 27, 1984. Since that time, the House and Senate have been unable to agree on legislation to either extend the surcharge or sanction such surcharges.

Gerald Hurst, Consumer Affairs Office, Federal Reserve Board, advised the Committee that, because of this legislative impasse, there is no ban on credit card surcharges at the present time. However, he cautions consumers, industry, and weights and measures officials that they should be aware that, when credit card surcharges are applied,certain disclosures to the public are required by the Truth in Lending Act. Thus, the type of credit card presented at the time of motor fuel purchases may cause disclosure problems for the credit card company. Under some conditions a credit card surcharge must be disclosed on the monthly statement as a finance charge. Under other conditions, the retail establishment is required only to disclose the surcharge fee.

Two bills introduced since January 1, 1985 will place a permanent ban on credit card surcharges. The House bill, HR #24, was introduced by Congressman Frank Anunzio (D-IL) and the Senate bill, S #212, was introduced by Senator Alfonse D'Amato (R-NY). Other bills are expected to be introduced that will require the credit card user to pay the cost of credit.

The Committee on Liaison and the Consumer Affairs Office of the Federal Reserve Board request that weights and measures officials advise them of any State or local legislation on motor fuel price posting which would impact the credit surcharge issue.

502 PUBLIC LIAISON

As an effort to improve awareness and understanding of weights and measures problems and issues, the Committee feels that relevant, concise weights and measures information should periodically be directed to consumer leaders, trade associations, and other agencies. This information will include weights and measures announcements and issues of concern to the general public or particular constituencies. A member of the Committee and the Executive Secretary of the National Conference on Weights and Measures will select the information and contact the groups and publications thought to be most appropriate for this purpose.

503 OIML STATUS REPORT (Joint session with the Executive Committee

Mr. David Edgerly, manager of the NBS Standards Management Program in the Office of Product Standards Policy, reported on the quadrennial OIML Conference held in October 1984, in Helsinki, Finland. Summaries were also

given of OIML standards committee developments and meetings, including those involving NCWM participation held during late 1984 and also those scheduled for 1985. Highlights of this report are as follows:

U.S. participation in OIML remains active and strong. Many items might be of interest, but attention will be focused on three areas that are of prime importance.

First, OIML held its 7th International Conference in Helsinki, Finland, this past October, and a brief summary of that meeting is provided.

Secondly, a report describes our efforts to organize an international intercomparison of load cell test rigs that should lead to a multilateral agreement for mutual acceptance of pattern evaluation tests of load cells. This effort may have an effect upon the new National Type Evaluation Program and will need the Conference's support in negotiating the multilateral agreement.

Thirdly, after some five years of effort, work is being completed on two OIML Recommendations dealing with electronic measuring instruments. The results of this work will be summarized because the requirements and test methods that will be agreed to internationally can be very useful to the Conference in its efforts to establish requirements and test methods for new families of electronic devices.

7th OIML Conference

Unlike the National Conference on Weights and Measures, which meets annually, the OIML Conference meets every four years. At these meetings, technical requirements covering measuring instruments of all types are adopted; policy questions are addressed and resolved; and a quadrennial budget for the Organization is worked out and adopted. The Conference runs for one week much the same as the National Conference.

1. 7th International Conference held in Helsinki, Finland, October 1-5 was the 4th International Conference attended by the United States.

    - o London 1972
    - o Paris 1976
    - o Washington 1980
    - o Helsinki 1984

2. Of the 49 current member nations of OIML, 39 sent delegations to the Conference.

    Five Corresponding members and 11 International Organizations were represented by observers.

    Peoples Republic of China sent a delegation to observe.

3. United States delegation included:

- o Stan Warshaw
- o David Edgerly
- o Ezio Delfino, Chairman-NCWM
- o Al Tholen, Executive Secretary-NCWM
- o Daryl Tonini
- o Frank Lancetti

4. Government of Finland was official host. Meetings were conducted in Finlandia Hall. Conference Chairman was Dr. Kakkuri, Director, Finland Technical Inspection Center (TTK). TTK is NBS equivalent in Finland and also responsible for legal metrology.

5. Work of the Conference: two Commissions were established to conduct the specialized work of the Conference: Technical Commission whose job was to review the 20 draft International Recommendations presented for adoption; and a Financial Commission, whose job was to review the quadrennial budget up for adoption. Commission meetings were held consecutively and the U.S. attended both. Between meetings of the Commissions, there were plenary sessions of the Conference.

6. Regarding Conference adoption of Recommendations of interest to the National Conference, nine of the 20 Recommendations presented for adoption dealt with devices that are familiar to our weights and measures community and are as follows:

A. Grain Moisture Meters - Prepared by France. USA did not support because reference methods for determining moisture content were not in accordance with official USDA Reference Methods.

B. Metrological Regulations for Load Cells - Prepared by U.S. Recommendation establishes performance requirements for pattern evaluation of load cells. It will serve as the base requirements for the international intercomparison of load cell test rigs to be discussed later.

C. Automatic Gravimetric Filling Machines - Prepared by the U.K. Establishes requirements and test methods for pattern evaluation of gravimetric filling machines.

D. Revision of IR3 Metrological Regulations for Non-Automatic Weighing Instruments - Prepared by FRG and France. IR3 and IR28 are considered the OIML Scale Code, so to speak. Revision of IR3 simplifies presentation of requirements and includes supplemental requirements for multi-range scales.

E. Revision of IR51 Checkweighing and Weight Grading Machines-Prepared by the U.K. Revisions were purely editorial and not worth mentioning.

F. Length Measuring Instruments - Prepared by France. Includes pattern evaluation requirements for fabric, wire, and cordage measuring devices. USA voted to accept the draft.

G. Tape Measures - Prepared by Belgium. Includes pattern evaluation requirements for all types of rigid and flexible tape measures and rules. USA did not support.

H. Checkweighers - Revision to existing IR, mostly editorial revisions.

I. Petroleum Tables - Prepared by the USA. Adoption of ISO standard 91/1 Volume correction tables of 15 ^{o}C/ 60 ^{o}F.

7. Eleven other Recommendations (3 prepared by U.S.) were also adopted. They relate to devices that are not subject to weights and measures control in this country.

8. Outside the technical arena, the Conference took several policy actions that may be of interest to NCWM.

A. Long-Term Planning - adopted the report of the Committee and passed a resolution instructing the Committee to implement its recommendations.

B. Certification system - Committee adopted rules for work to continue on developing system in concert with U.S. views and Conference accepted report.

C. 1985-88 Budget - adopted. About $500,000 per year. 2-3% real growth plus inflation of 8.5% indexed to actual rates. U.S. annual contribution will be $35,000 to $40,000 over period.

9. Summary

- 7th Conference was successful. Good participation and discussions, generally free of politics.

- Most U.S. delegation objectives were met. We did not support 3 proposed IRs for technical reasons: Sound Level Meters; Grain Moisture Meters; Tape Measures.

- Most significant aspects of the Conference:
  - 20 Draft IRs adopted (number steadily increasing)
  - Action on planning
  - General awareness that test methods are now extremely important
- Appreciate NCWM's support and participation
- Next Conference will be October 1988 in Sydney, Australia

Load Cell Intercomparison

Over the past year and a half, the United States has worked with officials from Australia, the Netherlands, West Germany, and the United Kingdom in devising an international intercomparison of load cell test rigs.

- The program will is to compare the results of pattern evaluation tests on load cells following the OIML load cell Recommendation just adopted at the 7th International Conference. Following the successful completion of the intercomparison, a multilateral test agreement will be negotiated among the five nations. In signing the protocol, each nation will agree to accept each other's test results without discrimination.
- As the program is now envisioned, NBS will be the pivot laboratory in scheduling and conducting the intercomparison and in analyzing and publishing the test results. The tests will be carried out on several cells of 25 metric ton capacity, representing two designs and two manufacturers.
- In preparing to participate in the intercomparison and to act as pivot lab, NBS has equipped its 112,000-lb test machine with an environmental chamber capable of operating within the -10 ^{o}C to +40 ^{o}C OIML temperature range. NBS has also acquired a barometric pressure chamber and are considering adding a humidity test chamber. Tests of load cells to OIML specs have been carried out at NBS and its Force and Mass Group is satisfied with the results.
- All things being equal, a successful intercomparison and resultant test protocol will benefit manufacturers wishing to get cells approved in the countries mentioned, be a step down the road to mutual acceptance of pattern approvals of entire scale systems by OIML member nations, and, of particular interest to this group, equip NBS to assist NTEP in handling approvals of large-capacity scales.

- At a planned meeting in April in the Netherlands, experts from the five national labs were scheduled to approve the procedures to be used in the intercomparison. If everything goes well, the intercomparison will begin in July or August and should be completed within a year. The multilateral agreement is to be signed in 1986, pending successful completion of the intercomparison.

- The new Scales Code will go into effect in January 1986 and includes, among other things, temperature and other environmental requirements that new scales will have to meet as of the effective date of the code. It is generally recognized that scales up to about 2,000-lb capacity will be tested as a unit within NTEP. That is, one of the approved NTEP labs will place the entire scale system into an environmental chamber to run the 50 °C temperature range test. However, for large-capacity scales (i.e., vehicle, axle load, livestock, and railway track) such is not the case. An NTEP test would involve a two-step process: first, approval of load cells and indicator under specified environmental conditions, followed by a test of the entire system in situ before issuance of the NTEP certificate. NBS is the only lab outside of industry that is equipped to run such tests. Further, it is not likely that the States will make the necessary capital expenditures of about $500,000 to purchase such test equipment. Accordingly, the existing NBS competence to test large capacity load cells will be useful in NTEP.

- Support from the NCWM will be necessary for this whole effort to be successful. It is, of course, obvious that any agreement with other nations regarding the mutual acceptance of pattern evaluation tests must first receive the support of the NCWM and NTEP in order for it to have any weight in the United States. Thus, NCWM support will be necessary in order for the United States to be able to negotiate the proposed multilateral agreement with Germany, Australia, The Netherlands and Great Britain.

The experts meeting held in April 1985 in the Netherlands resulted in a decision to expand the intercomparison to include load cells below the 25 metric ton capacity. Accordingly, the program will also entail tests of cells at the 500 kg and 18 kg capacity. The decision to expand the range of load cell capacities was driven on one hand by industry, and on the other by the other participating nations, who consider it important to intercompare pattern evaluation test capabilities over the broad range of load cell capacities now in use. The intercomparison is still scheduled to begin in September 1985, and is expected to take about 18 months to complete.

Electronic Measuring Instruments

Over the past several years two concurrent OIML committees have worked very closely on requirements for electronic measuring instruments. One committee, chaired by the Netherlands, has responsibility for drafting requirements and pattern evaluation test procedures considered applicable to all types of electronic instruments. Such requirements and tests, when finally approved, will serve as the basis for other OIML committees writing Recommendations on specific types of measuring instruments, e.g., scales, meters, medical instruments. In fact, the U.S. chairs a committee on electronic scales and has worked closely with our Dutch colleagues in drafting their general requirements. It is hoped that these two committees will finish their work this June(1985) during a joint meeting of the committees in Denmark. Approximately 25 nations actively participate in these meetings.

Conceptually, the requirements are quite simple. The basic requirement is that an electronic measuring instrument (e.g., scale, gas pump, medical device) must be designed such that it will not exceed maximum permissible errors under normal conditions of use, as determined by pattern evaluation testing. Further, conditions that tend to impair instrument performance are identified and classified into two categories: influence factors and disturbances.

Influence factors are quantities that are not the subject of measurement, but that affect the value of the measure and/or the indication of the instrument (e.g., temperature, humidity, barometric pressure, power voltage variations). Disturbances are quantities generally outside of normal operating conditions (e.g., electrical spikes, electromagnetic interference, static discharge) that also affect the indication of the instrument.

Under the requirements, a manufacturer must be able to demonstrate under pattern evaluation that his instrument will stay within the maximum permissible error under normal operating conditions and that, when subjected to disturbances beyond normal operating conditions, the instrument will either continue to function properly or, through means of self-checking circuitry, detect a change of data of a specified magnitude and react through audio or visual means. Thus the manufacturer can either so design and shield his equipment that it will not be significantly affected by disturbances or he can include checking circuitry that will detect and react to a significant change of data flowing through the instrument. In the case of electronic scales, a change of data equal to or greater than 1 scale division constitutes a significant fault.

If checking circuitry is included in the instrument there are requirements as to when checks must occur in the instrument and whether such checks are automatic or call for operator intervention.

An included series of pattern evaluation tests cover a wide range of influence factors and disturbances. In each test, severity limits of test conditions are indicated, as well as permissible errors. The working groups are still divided with respect to durability testing, where we run into semantic difficulties. Many of our European colleagues want to include tests that speak to the quality of electronic components over time. They term these durability tests, whereas we consider them reliability tests of electronic components. Our position is that reliability testing of electronic components is the concern of the manufacturer not the weights and measures official. In our opinion, durability testing of a scale, for example, means testing it under simulated conditions of use for a given period of time, say 100,000 applications of a weight representing some period of use. We hope to resolve this issue at the June meeting.

In summary, the work of these committees represents an enormous amount of manhours and technical experience that has paid off in the form of the two draft OIML Electronics Recommendations that will be completed this June. Their adoption at the Committee level will begin the long process of final adoption by the Organization, during which time they will be scrutinized by the 49 nations of OIML. However, as they currently stand, they offer a comprehensive set of requirements and test methods that the National Conference should begin to look at and consider for inclusion in Handbook 44 and NTEP.

In June 1985, delegations from 16 nations and 5 international organizations participated in OIML meetings dealing with requirements and tests for electronic weighing and measuring instruments. The meetings were hosted by the United States and the Netherlands, and resulted in the completion of work on an OIML International Document covering general requirements for electronic measuring instruments and on an OIML International Recommendation covering requirements specific to electronic weighing instruments. Both drafts will now be submitted to the International Committee of Legal Metrology for formal adoption. Of particular importance are the recommended performance and durability tests. For the most part, these tests are taken from existing test methods within the International Electrotechnical Commission (IEC).

Pilot Secretariat 20 (SP20) Prepackaged Articles

Meetings of Pilot Secretariat 20 (SP20) on Prepackaged Articles were held in Locarno, Switzerland, on June 4-7. The objectives of the meetings were to: 1) address package label requirements, and 2) develop the main principles of the compliance testing program used to verify package net contents. The meetings were attended by 16 people from the following countries:

Canada	Spain
Denmark	Sweden
France	Switzerland (Chairman SR 2)
Great Britain	United States (SR 1)
The Netherlands	West Germany

The meeting of SR 1, chaired by Eric Vadelund, National Bureau of Standards, addressed three specific topics. These included:

1) completion of the draft on "Information on Package Labels";

2) the need for OIML to be involved in ingredient labeling; and

3) development of a document on methods of sale and tests for difficult products such as aerosols, paints, and ice cream.

The draft on "Information on Package Labels", which includes the identity of the commodity, name and place of business of the manufacturer, packer, or distributor, and the net quantity of contents, was completed. A working copy is attached. Copies will be circulated for approval by the OIML Director in September 1985. Concerning ingredient labeling, the subcommittee felt that the issue deals more with product quality than metrology, is covered by the Codex Alimentarius Commission (a United Nations Organization), and lies outside the scope of OIML. However, the question of ingredient label statement formats may be addressed by this or another subcommittee at a later date. The development and circulation of a draft international document on the method of sale and tests for difficult products was scheduled for February 1986.

The meeting of SR 2, chaired by Pierre Koch of the Federal Office of Metrology, Switzerland, addressed the important characteristics of official sampling methods used to verify net quantity declarations of prepackaged products. The key items follow.

Point of Inspection and Compliance

Goods should be sampled at the points of production or of import, but in some cases they may be taken from transport, storage, or points of sale. Compliance requirements hold for goods with negligible time-dependent quantity variations (e.g., no moisture loss) and must be fulfilled at the point of production or at the point of import.

Lot Definition

Inspection lots are defined by the International Organization for Standardization (ISO) vocabulary 3534. Without specific reference to the ISO definition, it is believed that a lot is defined similarly to the U.S. definition, which includes all packages of the same product and label from the same packer entering commerce or offered for sale at one point in time. It is assumed that all packages bearing the same code are homogeneous. However, single shipments containing different date codes may be considered a single inspection lot. Large lots of the same code will be subdivided into separate inspection lots of 4000 units.

Tolerable Negative Errors

These are similar to our Maximum Allowable Variations (MAV) for individual packages and are identical to the European Economic Community (EEC) allowances. Unfortunately, these allowances are generally less than the MAV's in Handbook 133, particularly within the range of 10.5 oz (300 g) to 9 lb (4000 g). Although this may be of concern, it is partially alleviated by the compliance requirements.

TOLERABLE NEGATIVE ERRORS

Label Quantity (Q_n) In Grams or Milliliters	Percent of Q_n	g or mL
5 to less than 50	9%	
50 to less than 100		4.5
100 to less than 200	4.5%	
200 to less than 300		9.0
300 to less than 500	3%	
500 to less than 1 000		15.0
1 000 to less than 10 000	1.5%	

Sample Size

It was the intention of Chairman Pierre Koch to use one sampling plan and sample size for all lot sizes. However, the committee persuaded him to consider a separate plan for small lots with less than 150 individual units. The proposed plans include:

Lot Size	Sample Size
Less than 150	Not Yet specified
150 - 4,000	32
Over 4,000	See Note

Note: Divide large lots into sublots of 4 000 (or less if necessary) and use a sample size of 32 on each sublot.

The sample size of 32 is almost identical to the sample size used in H-133 Category A plan of 30 for lot sizes ranging from 31 to 800 and the Category B plan for lot sizes in excess of 250 units.

Compliance Requirements

OIML, like the European nations and the U.S., intends to base compliance requirements on the average concept. As with HB-133 Category A plans, a number of inspection sample units may fall below the tolerable negative error limits and the sample average may be slightly below the declared net contents and still be acceptable.

Specifically, OIML is considering a plan that will allow as many as 2 containers in a sample of 32 to be below the tolerable negative error. Also, the inspection sample average can be 2.45 standard deviations of the mean (α = 0.1) below the label declaration. Under H-133 Category A plans, one unit out of 30 may be below the MAV and the sample average cannot be lower than the label declaration by an amount greater than 2.0 standard deviations of the the mean (α = .025) adjusted for small lots.

In essence, the proposed OIML sampling plan and compliance requirements are similar to the H-133 Category A criteria. Although the OIML tolerable negative errors are smaller than the MAV's, twice as many are allowed. Under OIML, the producer's risk (α) is smaller.

The next meeting of SR 2 is planned in September 1986 in either St. Gallen, Switzerland, or Boras, Sweden.

504 OWM PROGRAM (Joint session with the Executive Committee)

Update of NBS Program

Al Tholen, Chief, Office of Weights and Measures, and Executive Secretary, National Conference on Weights and Measures, reported on the recent accomplishments of the Office of Weights and Measures and described the future program of the Office for the period 1985 through 1989 emphasizing tasks, trends, and new activities.

Mr. Tholen described four major activities, established three years ago, to:

1. expand support to the National Conference on Weights and Measures;

2. assist the 50 State measurement laboratories to upgrade and expand their technical services to local governments and industry;

3. fund, through a grant to the National Conference on Weights and Measures, the start of a national training program; and

4. develop a national, uniform, voluntary prototype evaluation program for commercial measuring and weighing devices.

The National Bureau of Standards supported these activities and has achieved impressive success in attaining related objectives. Development of two new programs has progressed on schedule with results that will benefit the State and industry interests (see Reference Key 304-1 for the current status of the National Type Approval Program, and the Report of the Committee on Education, Administration, and Consumer Affairs for the status of the National Training Program).

The following major tasks have been completed recently:

1. development and publication of NBS Special Publication 686, "State Weights and Measures Laboratories, Program Description and Directory," which describes the objectives of the NBS State Laboratory Program and describes the services provided by the State laboratories for support of their own regulatory activities as well as for other State and industry needs;

2. development and publication of NBS Special Handbook 143, "State Weights and Measures Laboratories, Program Handbook," which prescribes performance standards and procedures for:

   a. certification of the capability of State laboratories to produce reliable metrological measurements (principally in mass, volume, and length), and

   b. authorization of State laboratories to conduct tests of commercial devices under the National Type Evaluation Program;

3. development and publication of NBS Special Publication 691, "Index of the Reports of the National Conference on Weights and Measures, 1905 through 1985," which updates a previous index last updated in 1971;

4. updating and publication as the second edition of NBS Handbook 133, "Checking the Net Contents of Packaged Goods"; and

5. establishment of a newsletter, "**W&M Today.**"

Correspondence with NBS Director

Chairman Delfino wrote a letter to the NBS Director in support of the NBS program. Dr. Ambler's response was optimistic in terms of the current funding for the weights and measures program.

505 RAILROAD FREIGHT CAR STENCILED TARE WEIGHTS

Mr. John J. Robinson, Assistant Vice-President and Secretary of the Association of American Railroads (AAR), provided the Committee with a status report on freight car tare weights. Mr. Robinson's report was supplemented by a January 8, 1985 letter to Mr. A. D. Tholen, reprinted in part as follows:

> "As you know, certain car types (i.e., equipped box cars, refrigerator cars, covered hopper and tank cars, etc.) are "exempt" from the 60-month periodical reweighing provisions of the railroads' Interchange Rules. In addition, as set forth in Paragraph 3.4.5 of Section 3.4., RAILROAD CAR TARE WEIGHTS, of the Model State Regulation For

The Method Of Sale Of Commodities, such cars must be reweighed only when they bear no lightweight stencilling or when repairs/alterations result in a change of weight in excess of the permissible lightweight tolerance. It is not known how many of these cars have not been weighed within 60 months or which, if any cars, do not meet the permissible tolerances. However, 82,495 or 10% of these exempt cars were reweighed during 1984, an increase of 23,600 cars over the number weighed during 1983. This included 30,176 covered hoppers, or 12,008 more than the prior year.

In addition, 137,620 or 18.7% of the "non-exempt" general service fleet cars were reweighed during 1984, an increase of 30,797 cars over the number weighed during 1983.

As of January 1, 1985, 29% of the serviceable "non-exempt" freight car fleet tare weights or some 217,950 cars have not been reweighed within the past 60 months. The potential for possible inaccurate tare weights increases with the length of time between reweighing, and we have again urged the rail carriers to increase their activity in this area.

While we have not conducted a specific study, it is my impression that stenciled tare weights are actually being used by only a very small percentage of rail shippers due to the large number of carload rates, contracts, and weight agreements. In those instances where a shipper believes the stenciled tare weight to be erroneous, reweighing of the car may be requested under the weighing and reweighing tariff of the serving railroad. Such weighing services are normally provided without charge if the applicable tolerance between actual and stenciled tare weights is exceeded.

With the increased automation of accounting procedures, more and more rail carriers are relying on the tare weights of freight cars as reflected in the AAR's computerized equipment register, UMLER. We have an active on-going program by our field force to make random checks of stenciled tare weights that, in turn, are compared with the UMLER data base. When discrepancies are noted, corrective action is taken to insure that the tare weights agree.

I expect that the trend will continue toward the use of computerized data bases by both shippers and railroads in the next several years. It may be practical in the not-too-distant future to completely eliminate the stenciled tare weight from the side of freight cars.

Tare weights would be updated automatically in the UMLER file when cars are reweighed. Arrangements could be made for those few shippers who continue to require such information to obtain it as needed from their serving railroad."

The UMLER (Universal Machine Language Equipment Register) file is a computerized register of the national rail car fleet that includes the car tare weight and the date the tare weight was last updated for all freight cars. While the UMLER file is not complete at this time, the railroad industry is rapidly moving to complete the file and extend this computerized data base to both shippers and railroads. Mr. Robinson is suggesting that this trend may eventually eliminate the need for stenciled weights.

The Committee urges weights and measures officials to consider the ramifications if stenciled rail car tare weights are eliminated. To stimulate discussion, these points are offered:

- Who will have access to the UMLER file and how is the file accessed?
- What safeguards will exist to prevent unauthorized and fraudulent entries?
- Who will monitor the accuracy of listings?
- How will a noncomputerized shipper and/or railroad have access to the file?
- What charges will be assessed for obtaining tare weights from the file?
- What limitations exist or will be placed on shippers or other nonrailroad users accessing the file?
- How will discrepancies in the file's tare weight data be resolved?

These points, and others, need discussion so that the railroad industry can address the concerns, if any, of weights and measures officials before implementing a totally computerized system.

506 POLYETHYLENE SHEET PRODUCTS

The Flexible Packaging Association (FPA) has embarked on a program intended to provide protection to consumers and fair competition among manufacturers of polyethylene sheet products. They feel that the industry should accept the financial responsibility of testing by an independent laboratory to verify that their products meet the requirements of ASTM Standard D-4397 (formerly NBS Voluntary Product Standard 17-69) and the National Conference on Weights and Measures Uniform Packaging and Labeling Regulations. The industry should and will be held responsible by State and local weights and measures inspectors if there are flagrant violations of these requirements.

Labeling of polyethylene film products should be completely representative of the product that is marketed and all aspects of the product description should be the criteria used by the independent lab to determine compliance . . . not just, for example, the weight per roll. Upon compliance with the stated requirements, the independent testing laboratory will issue a Notice of Product Certification. The independent testing laboratory is the sole judge of product conformance to the FPA's product certification program. When certified by the FPA's contracting laboratory, a manufacturer may purchase and affix labels (bearing the testing laboratory logo and identity) stating that the product meets requirements.

The Committee met with Sharon Durand of the National Certified Testing Laboratories which will perform FPA's certification testing to discuss the program and to verify that they are familiar with the NCWM Uniform Packaging and Labeling Regulation as well as the package testing procedures for polyethylene sheet products provided in NBS Handbook 133, "Checking the Net Contents of Packaged Goods."

507 OWM, 150th ANNIVERSARY

Congress, in a joint resolution of June 14, 1836, gave its formal approval to weights and measures standards, established by Ferdinand Rudolph Hassler, and directed the Treasury to fabricate weights and measures standards for the customhouses and the States. By reason of the joint resolution of 1836, the Office of Weights and Measures is considered formally established as of that date in the Coast Survey of the Treasury Department.

NBS/OWM is planning a series of events to recognize the 150th Anniversary of the Office of Weights and Measures. Through these events NCWM and OWM hope to:

- increase the visibility for the recognition of weights and measures officials at the State and local level. This will help to show industry and the consuming public the role these officials play in maintaining, through regulation and enforcement, equity in the marketplace;

- assist industry and the public to understand the nonregulatory role of the Federal OWM and its relationship through NCWM to State and local jurisdictions which are responsible for weights and measures enforcement;

- promote uniformity in weights and measures laws and regulations, and methods of inspection among the State and local jurisdictions;

- improve industry awareness of NCWM's new national type evaluation program, which provides manufacturers of weighing and measuring devices with a centralized, uniform certification program of new devices that is accepted by all of the States, thereby reducing manufacturers' costs by eliminating duplicate device evaluations by several jurisdictions;

- promote acceptance of new standards for the labeling of alcohol fuel blends at the pump, and documentation of motor fuels through the distribution chain; and

- develop a better understanding by industry and consumers of the factors that affect the weight of certain packaged items, particularly food products that become lighter in weight because of loss of moisture.

Schedule of Events

The major meetings of industry and trade association groups provide a number of opportunities to publicize the work and accomplishemnts of the weights and measures community. The following is a partial list of these events for 1986:

Date	Events
January	Interim Committee Meetings of NCWM
April	Scale Manufacturers Association Annual Meeting
	Meeting of Industry Committee on Packaging and Labeling
	Northwestern Regional Weights and Measures Association Meeting
May	Northeast Regional Weights and Measures Association Meeting
	National Scalemen's Association Annual Technical Conference
June	Association of Food and Drug Officials Annual Meeting
July	Annual NCWM Meeting
September	Western Regional Weights and Measures Association Meeting
	National Association of State Departments of Agriculture Annual Meeting

October	Southern Regional Weights and Measures Association
	Milk Industry Foundation - Ice Cream Manufacturers Association Joint Annual Meeting

Planned Activities

1. Obtain a U.S. Postal Service commemorative stamp for National Weights and Measures. Written requests have been sent by Ernest Ambler, Director, National Bureau of Standards and Albert Tholen, Chief, Office of Weights and Measures to Paul N. Carlin, Postmaster General and the Citizen's Stamp Advisory Committee. If a commemorative stamp is obtained, a reception or other type of event will be held to publicize the issuance of the stamp.

2. "National Weights and Measures Week," traditionally celebrated during the first seven days in March each year, will incorporate the anniversary theme.

3. Obtain a "Presidential Proclamation" for the 150th Anniversary of the Office of Weights and Measures. The proclamation is to be issued in conjunction with a National weights and Measures Week resolution.

4. Produce Weights and Measures Week Guide, 1986. This is a media guide prepared each year by OWM as an NCWM publication and distributed to conference members for their use in coordinating local media events.

5. Create a 150th Anniversary Year Logo that will be used on only NCWM publications and letterheads. It cannot be used by OWM unless special DoC permission is granted.

6. Obtain a commemorative medal for the 150th Anniversary celebration.

7. Develop a "150th Anniversary Certificate" to be given to NCWM members in July 1986.

8. Develop promotional items for the "National Weights and Measures 150th Anniversary Year." They could include ties, pins, calendars, paper weights, and other items that will be sold.

9. NCWM will hold a banquet at the July 1986 annual meeting of the Conference, to be held in Albuquerque, N.M., to honor the 150th Anniversary of the Office of Weights and Measures. (Note: the Conference usually does not have an annual banquet as a part of the annual meeting. NCWM will invite appropriate speakers for the special anniversary year event.)

10. Develop and enlist business and consumer awareness for the 150th Anniversary celebration. Trade and industry associations will be requested to assist in promoting public awareness of the 150th Anniversary Year.

11. Produce and distribute to NCWM members a facsimile document of the congressional resolution of 1836 that created the Office of Weights and Measures.

12. Produce a souvenir brochure, which will include a description of major events, an outline of the history of the Office of Weights and Measures, and a facsimile document of the congressional resolution.

13. Prepare an article on the 150th anniversary of OWM featuring the latest scientific technology used in weighing and measuring devices for publication in NBS Research Reports.

14. Arrange for feature stories in major publications about the history of weights and measures activities and the 150th Anniversary Year in order to give the program of OWM/NCWM better visibility.

15. Prepare and plan public information activities, which will feature radio and television interviews, press releases, and press kits on select activities. DoC will send the programs to 500 radio stations.

16. Promote the film, "The Market Place," by making it available to trade, industry associations, and consumer groups. The film will be featured in the lobby of the NBS Administration Building. The film is available from OWM by request.

508 TASK FORCE ON MOTOR FUELS

During the 68th Annual Meeting of the National Conference on Weights and Measures in 1983, the delegates to the Conference voted to establish guidelines requiring that motor fuels containing alcohol be labeled to disclose to the retail purchaser that the fuel contains alcohol. The delegates deemed this action necessary since motor vehicle manufacturers were qualifying their warranties with respect to some gasoline-alcohol blends, motor fuel users were complaining to weights and measures officials about fuel quality and vehicle performance, and ASTM seemed so hopelessly deadlocked regarding quality standards for oxygenated fuels that quality specifications could possibly be years in development. While many argued that weights and measures officials should not cross the line from quantity assurance programs to programs regulating quality, the delegates were persuaded that the issue needed immediate attention.

For some time, several State administrators of motor fuel testing programs have recognized the need for a uniform approach to fuel inspection and regulation. With the introduction of gasoline-alcohol blends and the rush to

promulgate requirements affecting them, the need for a coordinated and uniform approach to motor fuel regulation became even more apparent. Also, many States without an inspection program were being urged by citizens to do something about what was perceived to be poor fuel quality. In an attempt to fill a regulatory and information void, Mr. Sam Hindsman, Director of the Arkansas Bureau of Standards and Chairman for the 69th Annual Meeting of the National Conference on Weights and Measures, appointed a Motor Fuels Task Force in January 1984. Mr. Hindsman gave the Task Force the mission of identifying information and resources that are available from standards development organizations, professional organizations, private companies, and trade associations for use in developing uniformity in the regulation of motor fuels. The members of the Task Force were:

N. David Smith (North Carolina), Chairman
Sydney Andrews (Florida)
Barbara Bloch (California)
David Karlish (Arkansas)
George Mattimoe (Hawaii)
Frank Nagele (Michigan)
Curtis Williams (Georgia)
Carroll Brickenkamp (NBS), Staff Assistant

In a letter dated April 13, 1984, Mr. Hindsman wrote the Nation's governors to inform them that the National Conference on Weights and Measures is vitally interested in motor fuel quality and that a task force had been appointed to seek uniformity in the evaluation and testing of motor fuels. Of the 52 letters mailed, including Puerto Rico and the Virgin Islands, 48 responses were received identifying a contact person for the Task Force. The enthusiastic responses to Mr. Hindsman's letter are an indication that motor fuel quality is an item of concern with State governments.

Since the Task Force was unsure of how many States have testing programs, how comprehensive the programs are, or how the nontesting States deal with fuel complaints, the Task Force decided to develop a detailed questionnaire to answer these questions. The questionnaire, which was mailed to each State in July 1984, was designed to provide information that would be helpful in developing a "uniform" testing program. A brief outline follows:

I. Survey of Laws, Regulations, and Administration
   - A. Are motor fuels tested in your State?
   - B. If not, are you planning such a program?
   - C. Number of personnel associated with testing program.
   - D. Provide Task Force with copy of law and regulations.
   - E. Is ASTM D-439 adopted and are modifications allowed?
   - F. How is the program funded?

II. Field Operations and Enforcement
   - A. How are petroleum products supplied to your State (pipeline, barge, rail, truck)?
   - B. Number of jobbers or wholesalers and retail outlets.

C. Frequency of inspection.
D. Gallons of products sold annually.
E. How are fuel samples taken and transported?
F. Are mobile laboratories used in your program?
G. What steps are taken to identify and remove substandard products from sale?
H. Number of fuel samples taken annually.

III. Technological Capabilities
A. Size of testing laboratory.
B. Organization of laboratory.
C. Types of tests performed and test method.
D. Number of tests performed annually for each type of test.
E. Types and brands of equipment used.
F. Planned equipment purchases.

IV. Gasoline-Alcohol Blends
A. Are gasoline-alcohol blends sold in your State?
B. Are such blends required to comply with the same quality standards as conventional gasoline?
C. Do you have a pump labeling requirement?
D. Are shipping papers required to disclose the presence of alcohol?

Questionnaires were mailed to all States and to Puerto Rico. Forty-three completed the questionnaires or responded by letter. Mr. David Karlish (Arkansas) compiled the responses in a format that can be printed for distribution to interested parties; this information is available on request to the Office of Weights and Measures.

The Task Force (except for George Mattimoe) met in Atlanta, Georgia on September 20-21, 1984. During the two-day meeting, it reviewed responses to the questionnaire and drafted a uniform motor vehicle fuel inspection law and regulations. The Task Force also heard a presentation by Mr. Harry Weaver, Motor Vehicle Manufacturers Association, concerning his association's position on alcohol labeling. Prior to the Atlanta meeting, the Task Force learned that Mr. Harwood Owings, Supervisor of the Maryland Motor Fuel Testing Lab, planned to organize a meeting during the North American Gasoline Tax Conference for the purpose of developing a model motor fuel inspection law.

The Task Force felt that two groups should not be working on the same problem. Due to Mr. Owings' considerable contributions and expertise, he was invited to become a member of the Task Force.

The Task Force met at the close of the Interim Meeting (February 1 and 2) to finalize the uniform law. It proposed a Uniform Motor Fuel Inspection Law and Uniform Regulation for Motor Fuel (see appendices D and E) for review and discussion at the Annual Meeting. The Task Force will submit the final draft to the Committee on Laws and Regulations for consideration at the January 1986 NCWM Interim Committee meeting.

As evidenced by the debates before the past two Conferences and the many hours of research and study by members of ASTM, it is extremely difficult to develop regulatory policy or guidelines regarding motor fuels, especially gasoline-alcohol blends, that serve the needs of fuel consumers and vehicle manufacturers while being fair to the developers of new fuels. After all, regulatory officials should not restrict the development of new fuels, but motor fuel users have a right to expect that the fuels they use will perform satisfactorily and not harm their equipment. The issues of fuel suitability, quality specifications, and appropriate testing methods have been thoroughly discussed by the Task Force. However, until ASTM develops and incorporates specifications for gasoline-oxygenate blends in the Annual Book of ASTM standards, it will be very difficult to achieve uniformity in the evaluation and testing of such blends. The Task Force understands that ASTM plans to publish gasoline-oxygenate standards. It will be wise for all those concerned with motor fuel quality to work at getting the Proposed Specification for Automotive Spark-Ignition Engine Fuels adopted as "the" standard.

The following items are appendices to this report:

A. Mr. Hindsman's letter to the governors;
B. the questionnaire;
C. States responding to the questionnaire;
D. proposed Uniform Motor Fuel Inspection Law; and
E. proposed Uniform Regulation for Motor Fuel.

509 TASK FORCE ON PACKAGE CONTROL

At the close of the 69th Annual Meeting of the NCWM in Boston in July 1984, activities of this Task Force were reassigned by the incoming Conference chairman. Package control issues are now being addressed by the Conference through the activities of the NCWM Task Force on Commodity Requirements and its associated Subcommittee on Commodity Standards. Inasmuch as no additional written comments were received on either the draft "I"-Mark Program concept or other aspects of the Task Force on Package Control's 1983-84 work agenda subsequent to the 69th Annual Meeting, no further report will be issued. Work of the Task Force on Package Control has been documented in both the 68th NCWM Proceedings (1983) as voting item 505, and in the 69th NCWM Proceedings (1984) as voting item 508. The latter report of activities was supplemented, in Appendix C of the 69th NCWM Proceedings, by the 23-page preliminary draft "I"-Mark Program Description.

N. D. Smith, North Carolina, Chairman

P. H. Adams, Bucks County, PA
C. R. Kloos, Beatrice/Hunt-Wesson Foods, Inc.
J. W. McCutcheon, USDA
K. J. Simila, Oregon

S. Hasko, NBS, Technical Advisor

APPENDIX A

NATIONAL CONFERENCE ON WEIGHTS AND MEASURES

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April 13, 1984

Honorable George C. Wallace
Governor of Alabama
Executive Department
State Capitol
Montgomery, Alabama 36130

Dear Governor Wallace:

As Chairman of the National Conference on Weights and Measures (NCWM), I am writing to seek your State's assistance on a matter of tremendous importance to the producers, retailers, and consumers of motor fuels. Because of recent complaints regarding the quality of certain motor fuels in several states, the NCWM has authorized the establishment of a task force whose mission will be to identify information and resources that are available and which will aid in the uniform evaluation and testing of motor fuels.

While the term "motor fuels" seems all inclusive, the main thrust of the task force is gasolines and gasoline-alcohol blends. The enclosed news release provides additional information on the National Conference on Weights and Measures, why the task force was formed, the organizations the task force will be contacting, and the identity of the task force members.

To expedite the work of the task force, please let me know who the person is most directly involved in administering Alabama's motor fuels inspection program. If Alabama does not have an active inspection program, we need to know the identity of the person who can answer questions regarding what motor fuels quality laws and regulations, if any, exist in Alabama. The assistance of your office in providing the appropriate name and address will be appreciated.

Sincerely,

Sam F. Hindsman, Chairman
National Conference on
Weights and Measures

(Same letter sent to 50 States
Puerto Rico & Virgin Islands)

Enclosure

APPENDIX B

SURVEY OF LAWS, REGULATIONS, AND ADMINISTRATION

Part 1

1. Is spark ignition motor fuel (gasoline and gasoline - alcohol blends) tested in your* state by a state or other regulatory agency?

   ___ YES

   ___ NO

1 a. Is your* state or regulatory agency in the planning stages of testing motor fuel (law passed or in the process of being passed)?

   ___ YES (Complete the questionaire with your first year plans)

   ___ NO (If "no", to questions 1 and 1a, please turn to Part 4, Gasoline-Alcohol Blends.)

2. Is your motor fuel testing program part of a division or section which has additional responsibilities?

   ___ YES (If "yes",please list those additional responsibilities.)

   ___ NO

3. Please provide us with an organizational chart.

4. What is your* annual budget?

   $_____(If your budget is for programs in addition to fuel testing, please provide only the amount related to operating your motor fuel testing program. Estimate if necessary.)

5. Number of personnel associated with your* motor fuels testing program. _____

6. Please provide us with a copy of your* motor fuels inspection law and regulations.

   # Does the law specify fuel requirements or does the law permit implementation of specifications by promulgation of regulations?

   # Who adopts your* rules (agency head, board, commission)?

* "You" and "your" means the responding agency.

Are public hearings required before adoption of rules?

After adoption, are your* regulations subject to review by another agency (Legislative review, Attorney General, other)? Please explain.

7. What are your* requirements on fuel advertising (price, self-service, grade, alcohol blends, etc.)?

8. Does your* law require product registration and, if so, at what level(s) (manufacturers, wholesalers, jobbers, retail operations) must the product be registered?

9. Who reviews or approves product registration? (hearing board, state chemist, etc.)?

10. What professional societies (ASTM, NCWM, SAE, etc.) do you* actively participate in?

11. Does your* law or regulations allow for modifications or exceptions to ASTM D-439? If "yes", do you have exceptions and, if so, please list them.

12. How is your* inspection program funded (general fund tax, motor fuel tax, user fee, etc.)?

13. Are retail outlets required to be licensed or registered?

___ YES

___ NO

14. If "yes" to number 13, can the license or registration be suspended or revoked for not meeting minimum requirements?

___ YES

___ NO

APPENDIX C

STATES RESPONDING TO QUESTIONNAIRE

1. ALABAMA
2. ALASKA
3. ARIZONA
4. ARKANSAS
5. CALIFORNIA
6. COLORADO
7. CONNECTICUT
8. DELAWARE
9. FLORIDA
10. GEORGIA
11. HAWAII
12. IDAHO
13. ILLINOIS
14. INDIANA
15. IOWA
16. KANSAS
17. LOUISIANA
18. MAINE
19. MARYLAND
20. MASSACHUSETTS
21. MICHIGAN
22. MINNESOTA
23. MISSISSIPPI
24. MISSOURI
25. MONTANA
26. NEBRASKA
27. NEVADA
28. NEW JERSEY
29. NEW MEXICO
30. NORTH CAROLINA
31. NORTH DAKOTA
32. OHIO
33. OKLAHOMA
34. OREGON
35. SOUTH DAKOTA
36. TENNESSEE
37. TEXAS
38. UTAH
39. VERMONT
40. WASHINGTON
41. WEST VIRGINIA
42. WISCONSIN
43. WYOMING

APPENDIX D

PROPOSED UNIFORM MOTOR FUEL INSPECTION LAW

SECTION 1. PURPOSE

It is desired that there should be uniformity among the requirements of the several States. This Act provides for the establishment of quality specifications for all liquid motor fuels, except aviation fuel and liquefied petroleum gases.

SECTION 2. SCOPE

The Act establishes a sampling, testing, and enforcement program, provides authority for fee collection, requires registration of motor fuels, and empowers the State to promulgate regulations as needed to carry out the provisions of the Act. It also provides for penalties.

SECTION 3. DEFINITIONS

As used in this Act:

3.1. MOTOR FUEL. — The term "motor fuel" means any liquid product used for the generation of power in an internal combustion engine.

3.2. DIRECTOR. — The term "Director" means the _____ of the Department of _____.

3.3. PERSON. — The term "person" means both plural and singular, as the case demands and includes individuals, partnerships, corporations, companies, societies, and associations.

SECTION 4. ADMINISTRATION, ADOPTION OF STANDARDS, AND RULES

The provisions of the Act shall be administered by the Director or his authorized agent. For the purpose of administering and giving effect to the provisions of this Act, the standards set forth in the Annual Book of ASTM Standards and supplements thereto, and revisions thereof, are adopted except as amended or modified by the Director. The Director is empowered to write rules and regulations on the advertising, posting of prices, labeling, standards for, and identity of motor fuels and is authorized to establish a testing laboratory.

SECTION 5. GENERAL DUTIES AND POWERS

The Director shall have the authority to:

5.1. Enforce and administer all the provisions of this Act by inspections, analyses, and other appropriate actions.

5.2. Have access during normal business hours to all places where motor fuels are marketed for the purpose of examination, inspection, taking of samples, and investigation. If such access shall be refused by the owner or agent or other persons leasing the same, the Director or his agent may obtain an administrative search warrant from a court of competent jurisdiction.

5.3. Collect or cause to be collected, samples of motor fuels marketed in this State, and cause such samples to be tested or analyzed for compliance with the provisions of this Act.

5.4. Issue a stop-sale order for any motor fuel found not to be in compliance and remand said stop-sale order if the motor fuel is brought into full compliance with this Act.

5.5. Refuse, revoke, or suspend the registration of a motor fuel.

5.6. Delegate to authorized agents any of the responsibilities for the proper administration of this Act.

SECTION 6. REGISTRATION AND CERTIFICATION OF MOTOR FUELS

All motor fuel must be registered by the name, brand, or trademark under which it will be sold. Such registration shall include:

(1) Name and address of person registering the motor fuel.
(2) Antiknock index or Cetane number, as appropriate, at which the motor fuel is to be marketed.
(3) Certification, declaration, or affidavit that each individual grade or type of motor fuel shall conform to the provisions of this Act.

SECTION 7. INSPECTION FEE

There shall be paid a fee of $_____ per gallon on all motor fuels marketed within this State for the purposes of administering and effectively enforcing the provisions of this Act.

SECTION 8. UNLAWFUL ACTS

It shall be unlawful to:

(1) Market motor fuels in any manner that may deceive or tend to deceive the purchaser as to the nature, price, quantity and/or quality of a motor fuel.
(2) Fail to register a motor fuel.
(3) Submit incorrect, misleading or false information regarding the registration of a motor fuel.
(4) Hinder or obstruct the Director, or his authorized agent, in the performance of his duties.
(5) Market a motor fuel that is contrary to the provisions of this Act.

SECTION 9. PENALTIES

Any person who violates any provision of this Act or regulations promulgated pursuant thereto shall be guilty of a misdemeanor, and upon conviction, shall be punished by a fine of not more than $_____, or imprisonment for not more than _____ years, or both.

SECTION 10. INJUNCTION

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

SECTION 11. SEVERABILITY PROVISION

If any word, phrase, provision, or portion of this Act shall be held in a court of competent jurisdiction to be unconstitutional or invalid, the unconstitutionality or invalidity shall apply only to such word, phrase, provision, or portion, and for this purpose the provisions of this Act are declared to be severable.

SECTION 12. REPEAL OF CONFLICTING LAWS

All laws and parts of laws contrary to or inconsistent with the provisions of this Act are repealed except as to offense committed, liabilities incurred, and claims made thereunder prior to the effective date of this Act.

SECTION 13. EFFECTIVE DATE

This Act shall become effective on _____.

APPENDIX E

PROPOSED UNIFORM REGULATION FOR MOTOR FUEL

SECTION 1. DEFINITIONS

1.1. **"SPARK-IGNITION MOTOR FUEL"** — "Spark-ignition motor fuel" means gasoline and its blends with oxygenates such as alcohols and ethers.

1.2. **"GASOLINE-ALCOHOL BLEND"** — For labeling purposes, "gasoline-alcohol blend" means any spark-ignition motor fuel containing one percent by volume or more, of ethanol, methanol, or any combination of ethanol and/or methanol.

SECTION 2. FUEL SPECIFICATIONS

2.1. Spark-ignition motor fuel shall meet ASTM "Proposed Specification for Automotive Spark-Ignition Engine Fuel." In addition, the maximum oxygen content permitted is 3.7 percent by weight.

2.2. Diesel fuel must meet current ASTM D975, "Standard Specification for Diesel Fuel Oils."

2.3. Kerosene must meet current ASTM D3699, "Standard Specification for Kerosene".

SECTION 3. GASOLINE-ALCOHOL BLENDS

3.1. **METHOD OF RETAIL SALE** - All motor fuel kept, offered, or exposed for sale, or sold, at retail containing at least one percent by volume of ethanol, methanol, or a combination shall be identified as "with," "containing," (or similar wording) "ethanol," "methanol," or "ethanol/methanol" on the dispenser front panel in a position clear and conspicuous from the driver's position, in a type one-half the size of the product identity but in no case less than one half inch in height, 1/16 inch stroke (width of type).

3.2. **DOCUMENTATION FOR PUMP LABELING PURPOSES.** — The retailer must be provided at the time of delivery of the fuel on an invoice, bill of lading, shipping paper, or other documentation, the presence and maximum amount of ethanol, methanol, or any combination of ethanol/methanol (in terms of percent by volume) contained in the fuel. This documentation is only for pump labeling purposes; it is the responsibility of any potential blender to determine the total oxygen content of the motor fuel before blending.

APPENDIX F

PRESENTATIONS ON FEDERAL ROLE IN NET WEIGHT COMPLIANCE

70th National Conference on Weights and Measures

Presented by

John W. McCutcheon
Deputy Administrator
Meat and Poultry Inspection Technical Service
Food Safety Inspection Service
U.S. Department of Agriculture
Washington, DC

and

John M. Taylor
Director
Office of Compliance
Center for Food Safety and Applied Nutrition
Food and Drug Administration
Washington, DC

BY MR. McCUTCHEON:

Good morning. I am very pleased to participate in this year's National Conference on Weights and Measures . . . and to have this opportunity to discuss net weight compliance from our perspective in the Food Safety and Inspection Service, which is responsible for meat and poultry inspection in this country.

Although USDA's Meat and Poultry Inspection program is nearly 80 years old, we are still evaluating it to see where improvements can be made. We have a long-range strategy based on four basic principles. One principle shows our commitment to protecting the public, and the other three point up our encouragement of industry and government productivity. I should add that protecting the public throughout the food chain is the primary objective of meat and poultry inspection; this objective certainly includes administering fair and enforceable net weight regulations for meat and poultry products.

Before we get into the net weight issue, it might be useful, for those of you who may not be familiar with USDA's Food Safety & Inspection Service, to provide a brief explanation of the Agency's meat and poultry inspection program. It derives its authority from the Federal Meat Inspection Act of 1906 and the Poultry Products Inspection Act of 1957, as amended by the 1967 Wholesome Meat Act and the 1968 Wholesome Poultry Products Act.

The 1906 Meat Inspection Act, along with the 1906 Food and Drugs Act, were the first efforts of Congress to protect American consumers legislatively.

The Federal meat and poultry inspection program is founded on the principle that the health and welfare of consumers should be protected by assuring that meat and poultry food products are wholesome, not adulterated, and properly marked, labeled and packaged. From its beginnings early in this century, the program has developed into a comprehensive system for inspecting all meat and poultry products shipped in interstate and foreign commerce. The Agency tests meat and poultry products for the presence of violative drug and chemical residues and other adulterants. In addition, food distribution channels are monitored to prevent violations of law. Industries allied to the production of meat and poultry products, such as shippers, warehousers, wholesale distributors, and retailers are subject to intermittent, unannounced reviews. All vehicles used to transport meat and poultry products are subject to examination by our inspectors.

In carrying out its programs, FSIS works with other Federal agencies, such as the Food and Drug Administration, the Environmental Protection Agency, and with State and local agencies. The 1967 and 1968 Acts ushered in the era of Federal/State cooperative inspection programs, authorizing the Federal Government to help States in developing and maintaining inspection programs that are "at least equal to" the Federal program. Federal aid has included advisory assistance by our Federal/State relations staff in planning and developing State programs, technical and laboratory support and training, and up to fifty percent of the cost of cooperative programs.

The meat and poultry inspection program has changed over the years in response to new knowledge and changing demands. Like the industry we regulate, we in the inspection service have had to adjust to a growing consumer population and improved technology and marketing practices. Today, USDA's food inspection force is by far the largest health inspection force in the Federal government, both in absolute numbers and in the ratio of inspectors to regulated facilities. We have 7,500 inspectors in the field overseeing the operation of some 7,200 meat and poultry slaughter and processing plants. In addition, States with their own inspection programs have 2,152 inspectors overseeing the intrastate operations of 5,768 plants. Figures include official, custom, and exempt plants.

The Meat and Poultry Inspection laws are very specific in contrast to those administered by FDA, which has a somewhat different regulatory role. Our inspection laws carry several mandates . . . every carcass is subject to inspection at slaughter . . . all slaughter and processing operations must be carried out under sanitary conditions . . . products must be properly labeled . . . product wholesomeness and identification must be maintained throughout the processing and distribution chain . . . meat and poultry imports are subject to reinspection on a statistical random sampling basis at ports of entry. As part of its responsibility, FSIS conducts a prior approval program for labels to be used on federally inspected meat and poultry products to assure that they are truthful and that the products contain appropriate ingredients.

The most significant difference between USDA and FDA is that USDA must conduct daily continuous inspection. USDA has authority to slow or halt production, retain product in the plant, and withdraw a Federal inspection grant. FDA . . . again, because of its different regulatory role . . . does not have such authority, nor does it have premarket approval authority for labels.

Our responsibility for net weight inspection was extended and reinforced by the Wholesome Meat Act of 1967 and the Wholesome Poultry Products Act of 1968. The Congressional intent was to protect the public from, among other things, improperly labeled and packaged meat and poultry. Regulations allowed for reasonable variations from the labeled net weight that are due to . . . (1) moisture loss or gain occuring despite good distribution practices . . . and (2) unavoidable deviations occuring despite good manufacturing practices. USDA is committed to uniform procedures for net weight at the Federal, State and local levels. I should point out that States may not impose any marking or labeling requirements on federally inspected product in addition to or different from those made under the Federal Meat and Poultry Inspection Acts. With respect to State-inspected product, the States must impose inspection requirements that are at least equal to Federal requirements; however, they may also impose additional requirements.

As many of you know, the net weight labeling issue has had a stormy history. In the course of developing weights and measures regulations over the years, some State and local governments did not provide for any reasonable variation in net weight caused by moisture loss or gain during good distribution practices. California was one of these states, and in 1972 a local official ordered bacon made by the Rath Packing Company, a federally inspected plant, removed from stores for shortweighting. Rath successfully challenged California's action in Federal District Court in 1973. However, in addition to ruling that California's standards were excessive, the district court held that USDA's regulation was so vague as to be void.

In response to the district court ruling, USDA developed a proposal in December 1973 to change the net weight regulations. The proposal defined the weight variations that would be allowed at the plant and at the time of retail sale. Free liquid in containers remained part of the net weight. The proposal provided for a mandatory, rather than voluntary quality control program to be operated by the producing plant. Five public hearings were held around the country in 1974 to explain the proposal. Over 1,600 comments were received from consumers, State weights and measures officials, and industry. No group expressed unqualified support for the proposal.

California appealed the district court decision to a circuit court of appeals and then to the Supreme Court. Both courts upheld the decision that Federal law preempted State law, but they reversed the lower court's ruling that the "reasonable variations" part of the regulation was void for vagueness. Following the Supreme Court decision, the States petitioned USDA, FDA and the FTC for new net weight labeling requirements. The

petition stated that the Federal standard allowing "reasonable" but undefined shortages in weight for moisture loss is not enforceable by either Federal or State officials because it is vague, and that existing regulations were unfair to consumers who do not receive full measure as represented on the package.

In response, USDA published a new proposal intended to provide information on the usable weight of the meat and poultry contents in the package at the time of purchase. Among the changes proposed were the adoption of weight definitions, a new definition of reasonable variation, a mandatory net weight quality control program, and a tightened inspection sampling procedure. The proposal drew more than 3,000 comments, many questioning the need for such changes and contending they would raise prices. More than two thirds of the respondents opposed the proposal.

USDA then sought additional data on which to reconsider its proposal from such sources as the Grocery Manufacturers of America, the Consumer Federation of America, and the General Accounting Office. In August 1980, a new proposal was published that would not only ensure accurate information about the contents of containers, but also provide specific net weight standards that State and local authorities could enforce at the retail level. The proposal would also establish uniformity with FDA's net weight labeling regulations for food products other than meat and poultry.

The proposal would replace reasonable variations due to loss or gain of moisture in the course of good distribution practices, or by unavoidable deviations in good manufacturing practices, with maximum allowable variations which appear to be reasonable when determined by specific procedures. The maximum allowable variations were based on recognized, unavoidable deviations which occur during the manufacturing process. Allowance for moisture loss during distribution was not made in development of these variations. Proposed allowed variations were determined after extensive consultation with the National Bureau of Standards. These variations would be used and enforced at the time of production, during distribution, and at retail sale by Federal, State and local regulatory officials within their respective regulatory authorities. Manufacturers who had data to support moisture loss allowances during distribution were encouraged to submit these data for our consideration.

The proposal also provided options for a definition of tare, which is one of the most difficult issues to resolve. With regard to liquids absorbed by the packaging materials, we made alternative proposals on whether to include such liquids in the tare. The proposal would, in most cases, include them in the labeled net weight. However, for those few products that are packed in substances that are normally discarded, such as water, brine, curing solution and vinegar, a drained weight standard would apply. For those products the free liquids would be included in the tare weight and not in the labeled net weight.

And the proposal also provided sampling procedures for enforcement purposes which reflect consultation with the National Bureau of Standards on appropriate, statistically sound sampling theory. A production lot would comply with the regulations if the total weight of a specified number of samples taken from that lot at least equalled the total of their labeled weights. For packages bearing a pre-printed tare weight statement, if the average weight of sample packaging materials and containers is equal to or less than the printed tare weight statement, the lot passes. If the average weight of the sample packaging materials and containers is greater than the printed tare weight, the lot fails.

Approximately 550 comments were received on the proposal from industry members, trade associations, State and local government officials, and individual consumers. Analysis of the comments showed significant opposition to the proposal on the grounds that the changes could have adverse economic impacts on industry that outweigh the potential benefits to the public. No further action has been taken on the proposal.

HOW NET WEIGHT IS NOW REGULATED

So much for the review of our policy efforts to devise a workable solution to the issues raised by the court cases. It might be useful, at this point, to discuss how we regulate net weight issues now . . . and what we see as the State's current role.

Part of the Agency's responsibility is to assure the accurate labeling . . . including net weight statements . . . of products when they leave federally inspected facilities. As I have said, the Federal Meat Inspection Act and the Poultry Products Inspection Act specifically provide for "reasonable variations" in net weight declarations. The Acts further stipulate that variations from the stated quantity of contents shall not be "unreasonably large." Efforts to accurately portray net weight contents in many meat and poultry products are complicated because of the naturally high level of moisture in such products, and by the further addition of moisture incidental to processing operations. Consequently, it is frequently difficult to ascertain how much subsequent weight variation because of moisture loss is "unreasonably large." We are, however, able to establish some working criteria—particularly with respect to those products that are imperviously packaged at official establishments. These criteria are made possible by in-plant net weight controls, coupled with processing controls, to assure that prescribed moisture limits are not exceeded. Such limits relate to permitted moisture absorption in the chilling of poultry carcasses, for example.

In traditional processing plants, the inspector uses lot inspection procedures to check on net weights. On the average, the inspector checks ten production lots a week. The number will vary according to the plant's history of compliance and other factors that come to the attention of the inspector, and he can increase or decrease the number of checks he makes.

The inspector follows procedures for net weight checks that appear in the Meat and Poultry Inspection Manual. The basic procedure is to check ten containers per lot. The inspector knows that not every one-pound package will weigh 16 ounces. He looks for the average, the high-low range, and the lower limit for individual containers. If the two lowest weights fail the lower limit for individual containers published in the Manual, or the sample average fails the lower limit for averages, the product is retained to be reworked or relabeled. However, if only one of the lowest weights fails the lower limit for individual containers, and/or the sample average falls between the lower limit and upper limit for 10-sample averages, the inspector will select and weigh an additional 30 containers before a decision can be made on the sample lot. The lot would be acceptable if, from the sample of 40 containers, no more than one container weight is below the lower limit for individual containers and the sample average is equal to or greater than the declared weight.

When a plant has an approved quality control system, either total quality control or partial quality control, the procedure, of course, is different. Perhaps a brief explanation of quality control systems in federally inspected meat and poultry plants is in order. Many plants have developed quality control systems to ensure consistency and wholesomeness in their products, as well as to control costs. The plants must then submit their quality control plan to the Agency for approval, so that we are satisfied the system will produce products that meet our regulatory requirements. Our inspectors monitor the plants for compliance with the plan, and this monitoring becomes, in effect, our means of inspecting them for compliance with the meat and poultry inspection regulations. Under a total quality control system, plants collect data during all stages of production on such variables as plant sanitation, the condition of ingredients, cooking times and temperatures, and finished product content and net weight. Critical control points along the production line are identified in the plan, and monitoring tests are specified at each point to check for problems. Our inspectors evaluate the company records of the tests on a regular basis at each critical control point, and also validate the records by conducting a number of their own checks. Further checks are made through the periodic sampling of final products. Under the partial quality control approach, a plan is developed for the preparation for individual products or processes, or for part of an operation designed to meet a particular requirement, such as the determination of net weight.

When a plant has a quality control system for checking net weights, it determines the frequency of net weight checks in its plant, subject, of course, to our approval. Frequency would depend on the type of operation. The higher the volume of production, the greater the frequency. For example, in plants producing canned hams, net weight checks at hourly frequencies may be appropriate; but in plants producing frozen dinners or frozen pizza, which are higher volume operations, net weight checks may be set at 15-minute intervals.

Although approved quality control plans will vary from plant to plant, they contain some basic components--(1) target values which establish the lower limit for individual weights, for subgroup averages of 10 weights, and for subgroup averages of 5 weights. Also, the limit for the ranges of subgroups

of 10 weights . . . (2) the subgroup size for a particular plan must be clearly indicated . . . (3) the frequency of weight checks for a particular plan must be indicated . . . (4) the name of the plant employee responsible for the quality control plan must also be indicated.

Our responsibility, then, is to see that the quality control plan submitted and approved by us is carried out. The inspector monitors the net weight checks, and the monitoring can range from checking any number of subgroups to a total lot check. In one plant the inspector might watch the plant's quality line to recheck the weights of those packages. In another plant, the inspector may weigh the packages before the plant does, and then recheck the weights recorded by the plant employee. Here again, the extent and nature of monitoring depends on the plant's history of compliance, other factors that come to the attention of the inspector, and our monitoring indicators.

We now have over 450 plants on our total quality control program, and approximately 3,200 partial quality control programs operating in over 1,800 plants. Approximately 350 of the partial quality control programs in operation are net weight programs. That means that 800 plants . . . about one out of nine federally inspected plants . . . have quality control for net weight.

USDA's responsibility for net weight does not end at the plant. It extends as far as a USDA-inspected product travels in the commercial distribution chain. In fact, it extends all the way to the final user of the product. When violations come to the attention of our compliance officers in the field, appropriate action is taken. And because State and local officials have concurrent jurisdiction with USDA over federally inspected product after it leaves a federally inspected plant, they have the authority to determine and enforce net weight compliance in locations such as warehouses and retail establishments in their jurisdiction. State and local enforcement officers could retain product for violations such as adulteration, misbranding, or gross mishandling. An example of the latter would be weight loss due to thawing of frozen product. And when a State does take action against a company for these kinds of violations, the action has the full support of the USDA.

CONCLUSION

I believe you will all agree that USDA, and all other participants in this conference, share a common purpose . . . and that is . . . to protect the consumer in the marketplace. In this context, the net weight inspection system in the United States . . . including Federal, State, and local jurisdictions . . . can be viewed as a public means of accomplishing in an efficient and effective way what is impractical for consumers to accomplish individually.

BY MR. TAYLOR:

I am very happy to be with you today. I guess the title of my brief remarks could be titled "Quality Control Practices of the Manufacturer."

FDA has the responsibility of enforcing the FD&C Act which requires (Sec.403 (e)(2)) the label of a food in package form to bear an accurate statement of the quantity of contents. The regulation (§101.105 (Q)) states that reasonable variations in good manufacturing practice (GMP) will be recognized. Variations from stated quantity of contents shall not be unreasonably large.

There are no FDA established guidelines concerning what are unavoidable deviations in GMP's for filling and weighing foods. It is the packer's responsibility to label the food with an accurate statement of the quantity of contents. FDA does not recommend or prefer particular practices or equipment. A weighing and filling practice that is not otherwise objectionable will be considered "current GMP" and FDA will not take exception to such practice if it packages food with accurate quantity of contents declarations.

In view of the fact that individual weighings by a manufacturer on a balance or scale would be just as acceptable to FDA as the fastest most automatic weighing system then it should be apparent that answers to questions about what are appropriate quality control practices must necessarily be based on a complete analysis of a particular set of circumstances. Otherwise, the answer to questions concerning how often?, what kind?, how much?, must be answered in generalities such as often as necessary to . . ., adequate to . . ., as much as is required to . . .

A manufacturer seeking advice from FDA about filling and weighing equipment and control procedures would be advised that it is his responsibility to assure accurate quantity of contents statements on labels and that FDA will evaluate procedures and will ordinarily not object to methods (no matter how primitive) that result in accurate statements. The manufacturer may be advised to consult filling and weighing equipment manufacturers or persons who have knowledge and experience about current manufacturing practices for this purpose.

DEFINITION OF LOT

For purposes of net quantity of contents determinations a lot will not necessarily be that which has been designated as a lot by the packer. It may be any identifiable sub-group or combination of groups (codes, etc.) that will serve to comprise a lot for purposes of quantity of contents regulatory actions.

FEDERAL (FDA) ADOPTION OF NCWM PRACTICES

Although it may be desirable, it is not necessary for FDA to agree with and adopt the conference's recommendations on all issues, especially practices such as described in Handbook 133. FDA rarely disagrees in principle with the NCWM. However, it may be appropriate for us to deviate from its recommendation when we factor in the practicalities of available resources, agency priorities, etc.

FDA ENFORCEMENT CRITERIA

FDA enforcement criteria and practices for net weight are intended to be reasonable. The one percent short weight criterion is designed to allow the agency to effect regulatory action with assurance that its inspectional and analytical techniques and a charge that a product is short weight will withstand any challenge from the packer and the courts. In addition, we believe that our practice of not initiating regulatory action unless there is a one percent deviation from the labeled quantity is justified in the light of the resources required to effect regulatory action. It should be noted that the one percent is not a "tolerance" (some NCWM members shudder at the word).

OTHER POINTS

- FDA is not primarily or even secondarily a weights and measures organization. Net weight is a minor part of our enforcement activities.

- FDA does not have power to order products off-sale.

- Weighing at packing site will be used to determine compliance and must be followed up by an official interstate sample. The interstate sample may be obtained at the packing site if the product has already been shipped in interstate commerce.

- FDA will rarely weigh at retail sites.

REPORT OF THE NOMINATING COMMITTEE

Sam F. Hindsman, Chairman
Director, Arkansas Bureau of Standards

REFERENCE KEY

800

The Nominating Committee met during the interim meetings at Gaithersburg in January and selected the listed persons to be nominated for officers of the Conference. In the selection of nominees from the active membership, consideration was given to professional experience, qualification of individuals, attendance, Conference participation, regional representation, and other factors considered to be important.

Each of the persons named has been contacted and has agreed to serve if elected.

CHAIRMAN-ELECT:	Frank Nagele, Michigan
VICE-CHAIRMEN:	Charles Carroll, Massachusettes O. Ray Elliott, Oklahoma Edward Skluzacek, Minnesota Charles Tandy, Jr., Alaska
EXECUTIVE COMMITTEE: (3-year terms)	James Lyles, Virginia Joseph Swanson, Alaska
TREASURER:	Charles Gardner, Jr., Suffolk County, NY
CHAPLAIN:	Francis W. Daniels, Wayne County, IN

Respectfully submitted:

Sam F. Hindsman, Arkansas, Chairman

Sydney D. Andrews, Florida
Edward C. Heffron, Michigan
Charles H. Greene, New Mexico
James F. Lyles, Virginia
Kendrick J. Simila, Oregon
Richard L. Thompson, Maryland

NOMINATING COMMITTEE

(On motion of the Committee Chairman the report of the Nominating Committee, voting key item 800, was adopted in its entirety by the Conference.)

REPORT OF THE RESOLUTIONS COMMITTEE

Charles Tandy Jr., Chief
Weights and Measures
State of Alaska

REFERENCE KEY

700

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 70th Annual Meeting. Special votes of thanks go:

(1) to Virginia Knauer, Special Adviser to the President for Consumer Affairs and Director of the United States Office of Consumer Affairs, for her interesting address describing some of the consumer problems at the national level and her encouragement to reach more consumers with the weights and measures message;

(2) to Dr. Ernest Ambler, Director of the National Bureau of Standards, for his comprehensive review of NCWM accomplishments and his thought-provoking challenge to "grass roots" weights and measures officials to apply in their everyday activities what has already been accomplished by the NCWM;

(3) to officers and appointed officials of the National Conference on Weights and Measures for their assistance and service toward progress on national issues;

(4) to committee members for their efforts throughout the past year preparing and presenting their reports; to the sub-committees and task forces for their discerning and appropriate recommendations;

(5) to governing officials of State and local jurisdictions for their advice, interest, and support in weights and measures administration in the United States;

(6) 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;

(7) to the staff of the J. W. Marriott Hotel for their assistance and courtesies, which contributed to the enjoyment and comfort of the delegates in their fine facilities;

(8) to the National Bureau of Standards 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; and

(9) to the Office of Weights and Measures staff:

Ann Heffernan
Karen Barkley
Terry Grimes
Dawn Hoffman
Carol McKenzie

for expert and hospitable operation of the administrative operations of the Meeting.

C. Tandy, Jr., Alaska, Chairman

S. Abercrombie, Georgia
W. Eldridge, Mississippi
D. Lynch, Kansas City, KS
E. Maxwell, District of Columbia
C. Pittman, Tennessee
F. Thomas, Pennsylvania

R. Smith, Technical Advisor, NBS

RESOLUTIONS COMMITTEE

(On motion of the Committee Chairman the report of the Resolutions Committee, Reference Key Item 700, was adopted in its entirety by the Conference.)

REPORT OF THE AUDITING COMMITTEE

Robert G. Williams, Assistant Director
Division of Marketing
Department of Agriculture
Nashville, Tennessee

REFERENCE KEY

900

The Auditing Committee met on Tuesday afternoon, July 16, 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.

R. Williams, Tennessee, Chairman

F. Clem, City of Columbus, OH
E. Romano, Glenn County, CA

R. Smith, NBS, Technical Advisor

AUDITING COMMITTEE

(On motion of Mr. Williams, the report of the Auditing Committee, Reference Key Item 900, was adopted by the Conference.)

REPORT OF THE CONFERENCE TREASURER

Charles A. Gardner, Assistant Director
Weights and Measures
Suffolk County Consumer Affairs, New York

REFERENCE KEY

1000 INTRODUCTION

It is my pleasure to report to you on the financial status of the Conference Treasury as follows:

CASH ON HAND - JUNE 30, 1984		$ 48,815.09
RECEIPTS		
Account No. 1.1 Registration	$16,550.00	
" " 1.2 Membership	51,590.00	
" " 1.3 Publications	235.00	
" " 1.4 Interest	2,720.71	
" " 1.5 Novelties	280.00	
" " 1.9 Miscellaneous	- 0 -	
TOTAL RECEIPTS		$ 71,375.71
TOTAL CASH BALANCE AND RECEIPTS		$120,190.80
DISBURSEMENTS		
Account No. 2.0 Annual Meeting	$12,314.59	
" " 3.0 Interim Meeting	22,458.99	
" " 5.0 Special Programs	21,372.65	
" " 6.0 Chairman's Expenses	6,015.07	
" " 7.0 Membership	5,216.68	
" " 8.0 Printing & Publications	7,702.18	
" " 9.0 Administration	5,073.25	
" " 11.0 Novelties	1,518.25	
TOTAL DISBURSEMENTS		$ 81,671.66
Cash on Hand - June 30, 1985		
Super N.O.W. Account -		
European American Bank		
Hauppauge, New York	$ 38,204.90	
Checking Account -		
Union Trust Co.		
Gaithersburg, Maryland	314.24	
TOTAL ASSESTS		$ 38,519.14
TOTAL DISBURSEMENTS AND ASSETS		$120,190.80

NATIONAL CONFERENCE ON WEIGHTS AND MEASURES
GRANT ACCOUNT

CASH ON HAND - June 30, 1984		$ 84,051.92
RECEIPTS		
Grant Payments	$134,249.20	
Interest	6,652.66	
TOTAL RECEIPTS		$140,901.86
TOTAL CASH BALANCE AND RECEIPTS		$224,953.78
DISBURSEMENTS		
Contractors	$155,436.65	
Equipment	5,481.50	
Supplies & Miscellaneous	2,905.86	
Return of Excess Funds	58,311.83	
TOTAL DISBURSEMENTS		$222,135.84
Cash Balance - June 30, 1985		
Super N.O.W. Account -		
European American Bank		
Hauppauge, New York		$ 2,817.94
TOTAL DISBURSEMENTS AND CASH BALANCE		$224,953.78

(Signed) Charles A. Gardner, Treasurer

(On motion of Mr. Gardner, the report of the Conference Treasurer, Reference Key Item 1000, was adopted by the Conference.)

APPOINTMENTS BY CHAIRMAN

Chairman George Mattimoe announced the following appointments or reappointments at the General Session on Thursday, July 18, 1985:

STANDING COMMITTEES

Education, Administration, and Consumer Affairs Committee

Tom Scott, State of North Carolina

Laws and Regulations

Sidney Colbrook, State of Illinois

Liaison Committee

James Akey, State of Kansas

Specifications and Tolerances Committee

David Watson, City of Fort Worth, TX

OTHER APPOINTMENTS

Parliamentarian - Kendrick J. Simila, State of Oregon

Assistant Treasurer - Fred Thomas, State of Pennsylvania

Sergeants-at-Arms - Lyman Holloway, State of Idaho
Norman Ross, State of Nebraska

Representatives to OIML
U. S. Advisory Committee: George Mattimoe, Hawaii
PS 20: Richard Thompson, Maryland

Associate Membership Committee

Harvey Lodge, Dunbar, Chairman
Walter Kupper, Mettler, Vice Chairman
Kenneth Appell, Colgate-Palmolive, Treasurer
Richard Davis, James River, Member
Chip Kloos, Hunt-Wesson Foods, Member
Anthony Ladd, A.J. Ladd Weighing & Packaging Systems
Andrew Moore, Grocery Manufacturers of America
Robert Nelson, General Mills
Raymond Wells, Sensitive Measurements Inc.
Art Kroll, Gilbarco, Inc.

Auditing Committee

Robert Williams, State of Tennessee, Chairman
John Berquist, City of Minneapolis
Edward Romano, Glenn County, CA

Budget Review Committee

George Mattimoe, State of Hawaii
Richard Davis, James River
Paul Engler, County of Los Angeles, CA
Thomas Kelly, State of New Jersey

Credentials Committee

Arthur Hershbein, Dade County, FL, Chairman
Eugene Keeley, State of Delaware
Gilbert Allen, City of Spokane, WA

Resolutions Committee

Charles Tandy, Jr., State of Alaska, Chairman
Charles Carroll, State of Massachusetts
William Eldridge, State of Mississippi
Donald Lynch, State of Kansas
George MacDonald, State of Minnesota
Earl Maxwell, District of Columbia
Fred Thomas, State of Pennsylvania

TASK FORCES AND SPECIAL COMMITTEES

Task Force on Commodity Requirements

The members of this task force remain unchanged.

Technical Committee on Commodity Standards

This commitee was formerly named "Subcommittee on Commodity Standards". Its members remain the same.

Task Force on Information Systems

Kendrick Simila, State of Oregon, Chairman

Technical Committee on National Type Evaluation

Weighing Industry Sector

Joe Giannina, Corpus Christi Public Elevator

Task Force on Motor Fuels

No changes were made in the membership of this Task Force.

Legislative Liaison Committee

This committee is newly formed and will report to the Liaison Committee. Its members are:

Don Stagg, State of Alabama,1 Chairman
Darrell Guensler, Stat of California
N. David Smith, State of North Carolina
Joseph Swanson, State of Alaska

REPORT OF STATE LABORATORY METROLOGY WORKSHOPS

Henry V. Oppermann
National Bureau of Standards

The workshop sessions were held on Monday, July 15 and on Wednesday, July 17. A tour of the Maryland Motor Fuel Testing Laboratory was conducted on Tuesday, July 16.

The workshop subjects included quality assurance for the laboratory, the calibration of the U.S. prototype kilograms, and the concerns of the petroleum industry regarding the accuracy and testing of loading rack meters. The wide range of interest in these subjects was reflected by the large attendance of industry and government officials other than State metrologists.

The tour of the Maryland Motor Fuel Testing Laboratory provided an opportunity for both State weights and measures directors and metrologists to see the equipment necessary to operate a large scale petroleum testing laboratory. Mr. Kent Nicodemus and Mr. Harwood Owings, Jr., (retired) of the Maryland laboratory provided informative explanations of their operation and fielded many questions regarding the regulation and testing of petroleum quality.

Dr. John K. Taylor, NBS Center for Analytical Chemistry, gave a comprehensive and educational lecture on the need for and benefits of quality assurance in the laboratory. He discussed the requirements for quality assurance programs, the components of the programs, and methods of auditing the measurement systems. The points covered by Dr. Taylor are applicable to all types of laboratories.

Dr. Richard Davis, NBS Length and Mass Division, Center for Basic Standards, reported on his work of calibrating the U.S. prototype kilograms to the international kilogram. The preparation, test procedures, and problems involved with this critical state-of-the-art measurement were of great interest to the metrologists. Many of the factors that are negligible at the State laboratories are major concerns in the calibration of national standards. Dr. Davis answered many questions from metrologists regarding mass calibration and related subjects.

Mr. Robert Harrington, Manager, Safety and Security Department, Marathon Petroleum Company, discussed the industry concerns regarding the testing of loading rack meters. His slides showed the great variety of loading rack meter installations and the equipment used to test the meters. He emphasized the importance of uniformity in test procedures and equipment to obtaining consistent test results independent of the test agency. He expressed the willingness of the petroleum industry to work with weights and measures to establish this uniformity.

The workshops closed with reports on the activities of each regional metrology group and an open discussion of the stability of large weights and the results of the measurement control program on glass flasks.

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