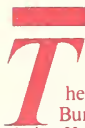


NBS SPECIAL PUBLICATION **725**

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

Report of the 71st National Conference on Weights and Measures 1986





The National Bureau of Standards¹ 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 Standards²
- 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 Engineering²
- Manufacturing Engineering
- Building Technology
- Fire Research
- Chemical Engineering²

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:

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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 Deformation³
- Polymers
- Metallurgy
- Reactor Radiation

¹Headquarters and Laboratories at Gaithersburg, MD, unless otherwise noted; mailing address Gaithersburg, MD 20899.

²Some divisions within the center are located at Boulder, CO 80303.

³Located at Boulder, CO, with some elements at Gaithersburg, MD.

Report of the

71st National Conference on Weights and Measures 1986

*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
Albuquerque, NM July 20-25, 1986*

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



*United States Department of Commerce
Malcolm Baldrige, Secretary
National Bureau of Standards
Ernest Ambler, Director*

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ABSTRACT

The 71st Annual Meeting of the National Conference on Weights and Measures was held at the Marriott Hotel in Albuquerque, New Mexico during the week of July 20 through July 25, 1986. The theme of the meeting was "Standardizing Standards - the Key to Equity."

This year's theme was chosen by Chairman George Mattimoe of Hawaii to lead the weights and measures community to recognize that much of the work of the Conference is the establishment of standards for the conduct and regulation of commerce throughout the country. Dr. Mattimoe emphasized the adoption and application of these standards in state and industry activities nationwide - thus "standardizing standards" - as the means to progress toward the Conference goals of uniformity and equity.

Significant progress was made in the development and application of the standards that are represented by key Conference products including NBS Handbooks 44, 130, 133, the National Type Evaluation Program (NTEP), the National Training Program (NTP), and the regulation of motor fuels.

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, NASDA Weights and Measures Division, and OIML Pilot Secretariat 20 (Prepackaged Products).

Reports by the 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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OFFICERS, OFFICIALS, AND COMMITTEES OF THE CONFERENCE

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(July 1985 to July 1986)

(Elected)

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Parliamentarian:	Kendrick Simila, Oregon
Assistant Treasurer:	Fred Thomas, Pennsylvania
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Pilot Secretariat/20:	Richard Thompson, Maryland

* Ex-officio members of the Executive Committee

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Bruce Niebergall, North Dakota

Tom Scott, North Carolina

Philip Stagg, Louisiana

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James Akey, Kansas

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Linda Mauer, Rhode Island

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Charles Gardner, Suffolk County, NY
Thomas Kelly, New Jersey
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Eugene Keeley, Delaware

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Donald Lynch, Kansas City, KS
Earl Maxwell, District of Columbia
George McDonald, Minnesota
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*Technical Advisor: Richard Smith, National Bureau of Standards

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Walter Kupper, Mettler Instrument Corp., Vice-Chairman
Kenneth Appel, Colgate-Palmolive Co., Treasurer
Richard Davis, James River-Dixie/Northern, Inc.
Chip Kloos, Beatrice/Hunt Wesson Foods, Inc.
Anthony Ladd, A. J. Ladd Weighing & Packaging
Robert Nelson, General Mills, Inc.
Ray Wells, Sensitive Measurement, Inc.

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John Elengo, Jr., Revere Corp., Chairman

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Lacy DeGrange, Maryland
David Edgerly, National Bureau of Standards
John Lacy, U.S. Department of Agriculture, P & S
Dennis Mahoney, U.S. Department of Agriculture, FGIS
Frank Nagele, Michigan
Henry Oppermann, National Bureau of Standards
Clifton Smith, California
James Truex, Ohio

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Edward Bratle, National Cash Register
William Goodpaster, Cardinal Scale Co.
Joe Gianinna, Grain Elevator and Processing Society
Richard Hurley, Fairbanks Weighing Div., Colt Industries
Fred Katterheinrich, Hobart Corp.
Harry Lockery, Hottinger Baldwin Measurements
Peter Perino, Transducers, Inc.
John MacDonald, Howe Richardson Scale Co.
John Robinson, Association of American Railroads
Thomas Stabler, Toledo Scale Co.
Daryl Tonini, Scale Manufacturers Association

Measuring Industry Sector

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E. Michael Belue, Southwest Pump Co.
Edward Bratle, National Cash Register
Charles Denny, William A. Wilson & Sons
Alfred Evans, Veeder-Root Co.
Robert Fonger, Bennett Pump Co.
Walter Gerdorn, Tokheim Corp.
Melvin Hankel, Liquid Controls
William Key, Tokheim Corp.
Larry Murray, Dresser Industries, Inc.
Richard Whipple, Gilbarco, Inc.

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Sidney Andrews, Retired, Florida
Barbara Bloch, California
David Karlish, Arkansas
Frank Nagele, Michigan
John O'Neill, Kansas
Harwood Owings, Retired, Maryland
Curtis Williams, Georgia
Steve Hasko, National Bureau of Standards

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Don Stagg, Alabama, Chairman
Peggy Adams, Bucks County, PA
Robert Belliveau, Retired, Procter and Gamble Co.,
Chip Kloos, Beatrice/Hunt Wesson Foods, Inc.
Bruce Litzenberg, Ohio
Carroll Brickenkamp, National Bureau of Standards

Task Force on Commodity Requirements

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Mahlon Burnette, American Meat Institute
Kenneth Butcher, Maryland
Paul Engler, Los Angeles County, CA
Edward Heffron, Michigan
Tom Klevay, Millers' National Federation
John McCutcheon, U.S. Department of Agriculture, MPIS
Allan Nelson, Connecticut
Howard Pippin, Food and Drug Administration
Stephen Pretanik, National Broiler Council
Carroll Brickenkamp, National Bureau of Standards

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Darrell Guensler, California
N. David Smith, North Carolina
Joseph Swanson, Alaska

Task Force on Information Systems

Kendrick Simila, Oregon, Chairman
James Lyles, Virginia
Joseph Rothleder, California
Gerald Hanson, San Bernardino County, CA
Karl Newell, National Bureau of Standards

PAST CHAIRMEN OF THE CONFERENCE

<u>CONFERENCE</u>	<u>YEAR</u>	<u>CHAIRMAN</u>
43rd	1958	J. P. McBride Director of Standards, Massachusetts
44th	1959	C. M. Fuller County Sealer of Weights and Measures, Los Angeles, California
45th	1960	H. E. Crawford Inspector of Weights and Measures, Jacksonville, Florida
46th	1961	R. E. Meek Director, Division of Weights and Measures, Board of Health, Indiana
47th	1962	Robert Williams County Sealer of Weights and Measures, Nassau County, New York
48th	1963	C. H. Stender Deputy Commissioner, Department of Agriculture, South Carolina
49th	1964	D. M. Turnbull Director, Division of Licenses and Standards, Seattle, Washington

50th	1965	V. D. Campbell Chief, Division of Weights and Measures, Department of Agriculture, Ohio
51st	1966	J. F. True State Sealer, Division of Weights and Measures, State Board of Agriculture, Kansas
52nd	1967	J. E. Bowen City Sealer of Weights and Measures, Newton, Massachusetts
53rd	1968	C. C. Morgan City Sealer of Weights and Measures, Gary, Indiana
54th	1969	S. H. Christie Deputy State Superintendent, Division of Weights and Measures, Department of Laws and Public Safety, New Jersey
55th	1970	R. W. Searles Sealer of Weights and Measures, Medina County, Ohio
56th	1971	M. Jennings Director of Marketing, Department of Agriculture, Tennessee
57th	1972	E. H. Black Director of Weights and Measures, Ventura County, California
58th	1973	George L. Johnson Director, Division of Weights and Measures, Department of Agriculture, Kentucky
59th	1974	John H. Lewis Chief, Weights and Measures Section, Department of Agriculture, Washington
60th	1975	Sydney D. Andrews Director, Division of Standards, Department of Agriculture and Consumer Services, Florida

61st	1976	Richard L. Thompson Chief, Weights and Measures Section, Division of Inspection and Regulation, Department of Agriculture, Maryland
62nd	1977	Earl Prideaux Chief, Weights and Measures Section, Division of Inspection and Consumer Services, Department of Agriculture, Colorado
63rd	1978	James F. Lyles Supervisor, Weights and Measures Section, Division of Product and Industry Regulation, Department of Agriculture and Commerce, Virginia
64th	1979	Kendrick J. Simila Administrator, Weights and Measures Division, Department of Agriculture, Oregon
65th	1980	Charles H. Vincent Director, Department of Consumer Affairs, Dallas, Texas
66th	1981	Edward H. Stadolnik Assistant Director of Standards, Division of Standards, Executive Office of Consumer Affairs, Massachusetts
67th	1982	Dr. Edward C. Heffron Chief, Food and Dairy Division, Michigan Department of Agriculture
68th	1983	Dr. Charles H. Greene Chief, Administrative Services, New Mexico Department of Agriculture
69th	1984	Sam F. Hindsman Director, Bureau of Weights and Measures, State of Arkansas

70th	1985	Ezio F. Delfino Assistant Director, Division of Measurement Standards, State of California
71st	1986	Dr. George E. Mattimoe Administrator, Measurement Standards Division, Department of Agriculture, Hawaii

STATE REPRESENTATIVES

The following is a list of designated State representatives who were present and voting on the reports presented by the Conference standing and annual committees.

<u>STATE</u>	<u>REPRESENTATIVE</u>	<u>ALTERNATE</u>
Alabama	Don E. Stagg	John B. Rabb
Alaska	Joseph L. Swanson	None
Arizona	None	None
Arkansas	Sam F. Hindsman	None
California	Darrell A. Guensler	B. Bloch
Colorado	Leo Letey	None
Connecticut	Allan M. Nelson	W. Slamon
Delaware	Eugene Keeley	None
District of Columbia	None	None
Florida	Wayne Ball	Max Gray
Georgia	Martin Coile	None
Hawaii	George E. Mattimoe	None
Idaho	Lane Jolliffe	A. D. Hurd
Illinois	Sidney A. Colbrook	Steve Mc Guire
Indiana	Robert W. Walker	None
Iowa	James O'Connor	None
Kansas	John L. O'Neill	Donald Lynch
Kentucky	None	None
Louisiana	None	None
Maine	Clayton F. Davis	Bernard Austin
Maryland	Richard L. Thompson	Lacy H. DeGrange
Massachusetts	Charles H. Carroll	None
Michigan	Edward C. Heffron	Frank Nagele
Minnesota	Edward Skluzacek	George MacDonald
Mississippi	William P. Eldridge	None

Missouri	Lester Barrows	David James
Montana	None	None
Nebraska	Steven A. Malone	Michael L. Deisley
Nevada	None	None
New Hampshire	Michael F. Grenier	None
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New Mexico	Fred A. Gerk	Charles H. Greene
New York	John J. Bartfai	Ross Andersen
North Carolina	N. David Smith	Thomas W. Scott
North Dakota	Bruce Niebergall	None
Ohio	James Truex	None
Oklahoma	O. Ray Elliott	Charles Carter
Oregon	Kendrick J. Simila	George Shefcheck
Pennsylvania	Fred A. Thomas	Ronald R. Crust
Puerto Rico	Edmund Rosario	None
Rhode Island	None	None
South Carolina	John Pugh	None
South Dakota	James Melgaard	None
Tennessee	Robert G. Williams	None
Texas	Charles Forester	Herb Eskew
Utah	Edison J. Stephens	Harvey J. Crook
Vermont	Trafford F. Brink	None
Virgin Islands	None	None
Virginia	James F. Lyles	G. W. Diggs, III
Washington	Sterling McFarlane	Gilbert Allen
West Virginia	Jim Rardin	Karl Angel
Wisconsin	Robert Probst	None
Wyoming	Victor Gerber	William Hovey

NCWM SCHEDULED EVENTS

71st ANNUAL MEETING

	SUNDAY	MONDAY	TUESDAY
8 a.m.		ORIENTATION SESSION FOR MEMBERS	LIAISON COMMITTEE SESSION
9 a.m.			
10 a.m.		SPECIFICATION AND TOLERANCES COMMITTEE SESSION	EXECUTIVE COMMITTEE SESSION
11 a.m.			
Noon			
1 p.m.		LUNCH (OPEN)	LUNCH (OPEN)
2 p.m.	STANDING COMMITTEES AGENDA REVIEWS		GENERAL SESSION — CEREMONIAL —
3 p.m.	EXECUTIVE COMMITTEE	LAWS AND REGULATIONS COMMITTEE SESSION	OPENING CEREMONY ADDRESSES HONOR AWARDS PRESENTATION
4 p.m.	EDUCATION COMMITTEE		
5 p.m.	LAWS/REGULATIONS COMMITTEE		ASSOCIATE MEMBERSHIP COMMITTEE
6 p.m.	LIAISON COMMITTEE	EDUCATION COMMITTEE SESSION	TASK FORCE ON COMMODITY REQUIREMENTS
7 p.m.	SPECIFICATIONS AND TOLERANCES COMMITTEE		
8 p.m.	NASDA WEIGHTS AND MEASURES DIVISION		
9 p.m.	TASK FORCE ON INFORMATION SYSTEMS		
	CHAIRMAN'S RECEPTION	OPEN	OPEN

WEDNESDAY					THURSDAY	FRIDAY		
EXECUTIVE COMMITTEE	EDUCATION COMMITTEE	LAWS/REGULATIONS COMMITTEE	LIAISON COMMITTEE	SPECIFICATIONS & TOLERANCES COMMITTEE	VOTING SESSION* (CONTINUED) 5•NOMINATING COMMITTEE 6•LAWS & REGULATIONS COMMITTEE 7•LIAISON COMMITTEE 8•RESOLUTIONS COMMITTEE 9•AUDITING COMMITTEE 10•TREASURER'S REPORT •CLOSING CEREMONY	BREAKFAST MEETING EXECUTIVE COMMITTEE AND OFFICERS	8 a.m.	
							9 a.m.	
REGIONAL ASSOCIATION SESSIONS							STANDING COMMITTEES — PLANNING	10 a.m.
NORTHEAST	CENTRAL	SOUTHERN	WESTERN				SPECIAL COMMITTEES AND TASK FORCES — PLANNING	11 a.m.
LUNCH (OPEN)					LUNCH (OPEN)		Noon	
VOTING SESSION* 1•VOTING PROCEDURE 2•EDUCATION COMMITTEE 3•EXECUTIVE COMMITTEE 4•SPECIFICATIONS AND TOLERANCES COMMITTEE					TASK FORCE ON MOTOR FUELS		1 p.m.	
							2 p.m.	
							3 p.m.	
							4 p.m.	
						ABBREVIATIONS KEY: NASDA = National Association of State Departments of Agriculture NCWM = National Conference on Weights and Measures	5 p.m.	
							6 p.m.	
ASSOCIATE MEMBERSHIP RECEPTION					CONFERENCE OUTING		7 p.m.	
						*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.	8 p.m.	
							9 p.m.	

NATIONAL CONFERENCE

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MEMBERS:	F. CLEM, OH (3) L. MAUER, RI (1)

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MEMBERS:	G. ALLEN, WA (2) E. KEELEY, DE (3)

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REPRESENTATIVES TO OIML:	U.S. ADVISORY COMMITTEE:
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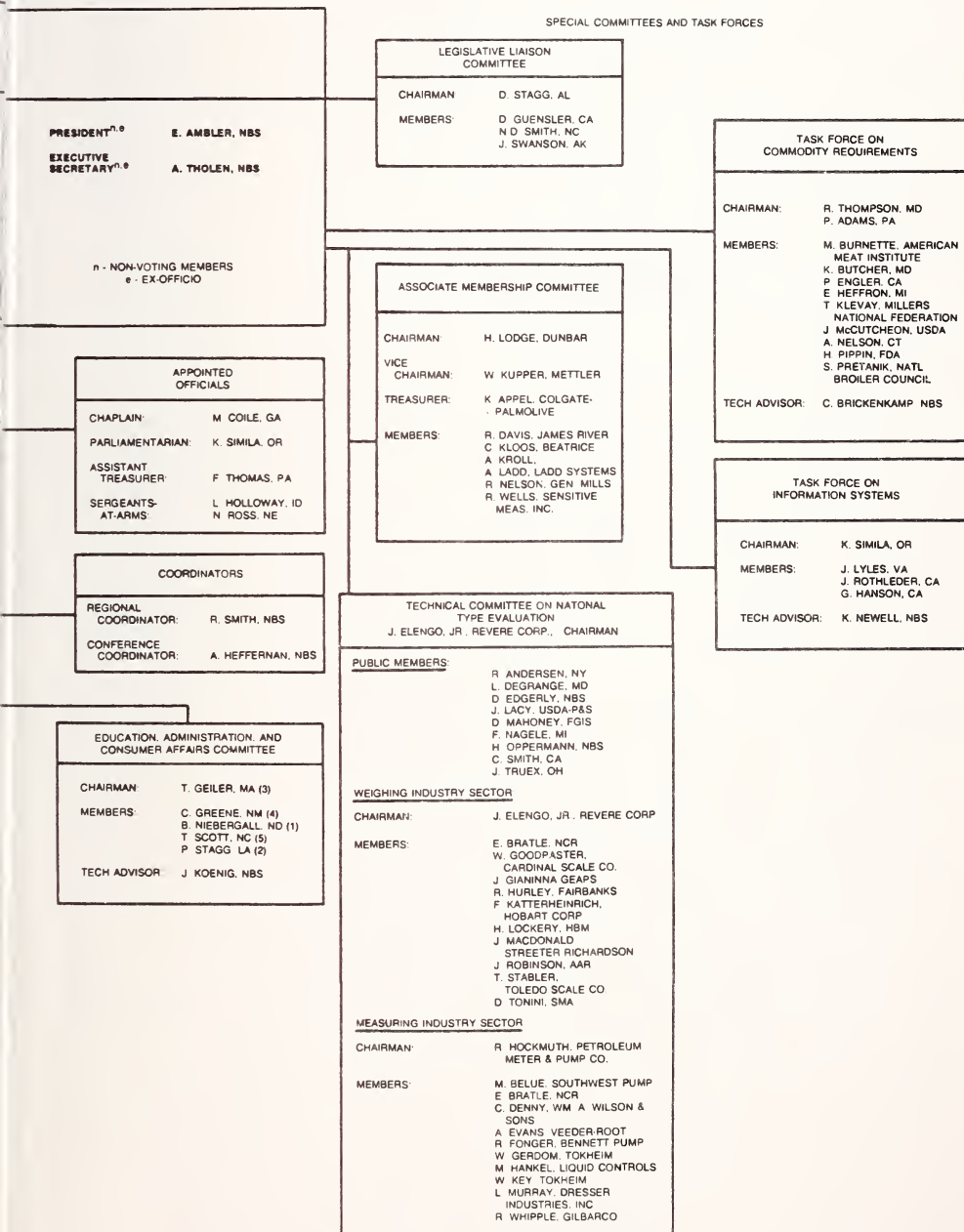
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TASK FORCE ON MOTOR FUELS	
CHAIRMAN:	N.D. SMITH, NC
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TECH ADVISOR:	S. HASKO, NBS

WEIGHTS AND MEASURES WEEK SUBCOMMITTEE	
CHAIRMAN:	P. ADAMS, PA

ON WEIGHTS AND MEASURES



GENERAL SESSION

GENERAL SESSION AGENDA

GEORGE MATTIMOE
Conference Chairman, Presiding

Call to Order

Presentation of Colors and National Anthem

Invocation and Pledge of Allegiance
REV. MARTIN T. COILE
Conference Chaplain
Director, Weights and Measures Laboratory
State of Georgia

Introduction of Dr. William P. Stephens
FRED GERK
Director, Division of Standards and Consumer Services
New Mexico Department of Agriculture

Welcoming Address
WILLIAM P. STEPHENS
Secretary/Director
New Mexico Department of Agriculture

Keynote Address
ERNEST AMBLER
Conference President
Director, National Bureau of Standards

Standardizing Standards - The Key to Equity
GEORGE MATTIMOE
Conference Chairman
Administrator, Measurement Standards
Hawaii Department of Agriculture

Honor Awards Presentation
ERNEST AMBLER
Conference President

INTRODUCTION OF DR. WILLIAM P. STEPHENS

Fred A. Gerk, Division Director
Standards and Consumer Services, NMDA
Tuesday, July 22, 1986

It is now my pleasure to introduce my boss for the last 14 1/2 years.

He was born on a farm in eastern Tennessee. He earned both his B.S. and M.S. degrees in Agricultural Economics from the University of Tennessee in Knoxville and his Ph.D. at the University of Minnesota.

In spite of this southern influence in his early years, he has become a successful westerner as well as a national leader in agriculture. He initially joined the staff of New Mexico State University as an instructor and did teaching and research in the Department of Agricultural Economics and Agricultural Business. He moved through the academic ranks from instructor to a full professorship.

In 1966, Dr. Stephens was appointed Assistant Director of the Agricultural Experiment Station making him administratively responsible for six experiment stations throughout New Mexico.

In January of 1972, he was appointed Director of the New Mexico Department of Agriculture and has served in that capacity since then. On March 31, 1978, he was sworn in as the first Secretary of Agriculture on the Governors Executive Cabinet for the State of New Mexico. Thus, he currently serves as Director/Secretary for the New Mexico Department of Agriculture.

Dr. Stephens is a member and representative of 22 task forces, committees, and commissions. He is past president of the National Association of State Departments of Agriculture (NASDA), immediate past president of the Western Association of State Departments of Agriculture (WASDA), and current president of the Western U.S. Agricultural Trade Association; serves in advisory capacity to many organizations and agencies; has been the recipient of an Outstanding Service Award, New Mexico State University; Award for Distinguished Service to Agriculture in 1976 from the New Mexico Farm and Livestock Bureau; and honored in 1983 by the New Mexico Cattle Growers' Association for past and continued support of the livestock industry in New Mexico.

But, best of all, he believes in and is a strong supporter of weights and measures. Dr. Stephens.

PRESENTATION TO THE NATIONAL CONFERENCE ON WEIGHTS AND MEASURES

Dr. William P. Stephens, Director/Secretary
New Mexico Department of Agriculture
Tuesday, July 22, 1986

It is indeed my pleasure to welcome the members and guests of the National Conference on Weights and Measures to Albuquerque for the 71st Annual Conference. I hope each of you either came early or plans to stay after the Conference to enjoy the scenic southwest. Our tri-cultural heritage offers many attractions that I feel sure you will enjoy.

I know Conference literature packets have included material on New Mexico and so I hope you will read this and take the opportunity to visit these locations. Particularly, I hope you will come south and see Las Cruces and the Mesilla Valley, home of the New Mexico Department of Agriculture and one of the finest vegetable growing areas in our state. It is also the home of a product dear to New Mexicans and becoming well known throughout the country. Of course, I mean chile. Chile is not beans and peppers but is a dish of prestige on its own and so important to us that we have a society that touts its lore and asks that you pledge allegiance to it.

New Mexico agriculture is a billion-dollar-a-year industry. We consider agriculture one of the top industries in this state along with tourism and the extractive industries. We have 14,000 farms in the state. Out of 78 million acres, over 90 percent is used for agricultural purposes. Cash receipts from livestock account for about 65 percent of the total billion dollar and crops 35 percent. The top ten producers are beef cattle and calves, milk, hay, wheat, cotton lint, chile, sorghum grain, greenhouse nursery products, corn, and pecans. We recently added wine production and pistachios to our commodity list.

New Mexico agriculture is blessed with a year-round production schedule and a diversified operation that has kept us basically strong economically during the current difficult economic times in the nation. We consider diversification very important and believe that this mix of vegetable growing, hay, grain, and livestock production will help our farmers and ranchers survive the tough times. I hope you will look for New Mexico products and remember our chile, pecans, and beef when you eat out or look for products to take home to your state.

I'm glad I finally had the opportunity to attend a National Conference on Weights and Measures because now I know why Fred Gerk and Charlie Greene hold it in such high esteem, and why they have spent so much time on Conference activities. There have been times during the last 10 to 15 years when I wondered if Fred and Charlie worked for me or the National Conference. As you know, Charlie has served on several NCWM committees and as Chairman of the Conference, and Fred chaired the Task Force on Belt Conveyor Scales and is now serving as Chairman of the Specifications and Tolerances Committee.

I make this comment with tongue in cheek because I know how important the Conference is to the weighing and measuring industry, and I am and always will be a strong supporter of the conference.

The New Mexico Department of Agriculture relies heavily on decisions reached by the Conference. I cite the alcohol fuel labeling guideline as a prime example of a decision developed by the Conference and adopted by the New Mexico Department of Agriculture.

We look forward to the guidance and decisions reached by some of the special groups currently in effect such as the Motor Fuel and Commodity Requirements Task Forces.

We are particularly pleased with the new training program developed by the Conference. This program should allow us to offer the comprehensive training needed in the economical manner that is mandatory in today's budget climate.

The New Mexico Department of Agriculture prides itself on the professional conduct of our service and regulatory activities. The training program will add to that professionalism. You can count on New Mexico's continued support of weights and measures nationally.

Again, welcome, and everyone have a great time—work hard, play hard, and enjoy your stay in New Mexico.

A BANNER YEAR

Dr. Ernest Ambler
President, National Conference on Weights and Measures

Dr. Stevens, colleagues and friends of the National Conference on Weights and Measures:

This has been a banner year for weights and measures in the United States. This makes it, therefore, all the more a special pleasure for me to attend another annual meeting, the 71st, and my fifth in succession. George, I suddenly realized when you movingly referred to your year, how lucky I am to have an "ex officio" position and not an elected one.

New Mexico is a most fitting state in which to hold this meeting. Not only is the state an excellent host, but New Mexico has contributed in special ways to the progress of the Conference.

As chairman of the Conference in 1982, Dr. Charles Greene submitted a request for a grant from the National Bureau of Standards for seed money to fund the development of a national training program. He shepherded that program in its beginnings, laying the groundwork for its current accomplishments. Of special note is the observation that Charles is working on this program again as a member of the Committee on Education, Administration and Consumer Affairs.

Another major accomplishment of the conference was the adoption of the new scales code. Mr. Fred Gerk has been a major player in that effort during the years of its development.

We appreciate your leadership and hard work on behalf of us all.

Last year, I talked to you about the importance of returning to your jurisdictions and implementing the decisions of the Conference at all levels within your state, county, city, industry, and business. My message was that only then would our efforts "Payoff at the Grassroots". I highlighted three areas as examples of the possible payoff if we all followed through on this challenge. They were:

- o 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;
- o that every state adopt and apply the latest changes in the uniform regulations, Handbook 44, and Handbook 133; and
- o that every state inspector be fully qualified based on standards adopted by this Conference.

Today, I am adding two more areas to these three:

- o that every state participate in the National Type Evaluation Program; and
- o that all weights and measures officials in the United States become members of the National Conference.

I am going to review our accomplishments; in doing this, I will:

- o comment on the accomplishments made in recent times;
- o describe the goals still to be made if we are to attain the results required for the health and vigor of the weights and measures system in the future; and
- o highlight special achievements in attainment of the grassroots payoffs for which we are striving. These I am labeling as "banner" achievements.

I am proud to be a member of the National Conference and very much enjoy being your president. You, who work hard on behalf of the Conference, believe as I do that the results are well worth the effort invested.

We have witnessed significant growth in membership and in the involvement of members on the conference committees during the past few years. I believe that this increased activity has produced needed results. Adding more members is a goal to strive for to ensure that we are representing- the broadest base of interests in addressing the issues. To this end, I am going to announce and make the first presentation later today of the "President's Award".

As I said last year, the state laboratories program is now well documented. The program policies, procedures, and standards are completed and published. Therefore, the program is on solid ground.

The recognition and use of these laboratories is broadening. The integrity of state regulatory programs is steadily increasing. The place of these laboratories in the support of their local industry is emerging to the level of recognition envisioned by those who designed the program 20 years ago.

A new state laboratory has been built and dedicated.

Another state laboratory has been relocated to a better facility.

Plans for several other laboratories are on the drafting board. Members of NBS have been involved, as they should be, in the development of these plans and their evolution into the completed product. All of this confirms the importance of the state laboratories in the commerce of the states.

A major new publication is undergoing the customary technical review at the Bureau, the State Metrologists' Handbook. This publication will be the source of good laboratory procedures, good measurement procedures, and standard operating procedures for many years to come. It is very impressive and will be the basis for attaining and maintaining a high level of professional operation and service uniformly in all the states.

A new initiative is being developed by the Bureau in cooperation with a few state and industry laboratories. We call the project "Automated Advanced Metrology". Our goal is to transfer NBS procedures for mass calibration to the state and private laboratories through advanced software and equipment. If all goes as we expect, these laboratories will be able to provide mass calibrations at an advanced level.

The project consists of three phases:

The first phase is the development of a "package" of equipment and procedures.

The second phase is a "round robin" to test the "package".

The third phase completes the "package" by adding additional software and check standards.

The first phase of the project has been completed. A "package" has been put together. It consists of equipment and a system to automatically read and input into a computer the air temperature, pressure, and relative humidity.

Equipment in the "package" includes a balance, NBS-calibrated thermometers, hygrometer, and barometer, together with a computer and a "soaking" chamber designed to keep the weights used in the measurements at the same temperature as the balance chamber.

Software is also built in to guide the lab personnel through the measurement sequence, perform the data analysis, and print out a calibration report. This "package" has been assembled into two special containers for shipment; together they weigh about 300 pounds.

The second phase of the project is now under way. The Bureau is working with the state laboratories in California, Hawaii, Nevada, Utah, Colorado, and New York, and the corporate laboratories of the 3M Company and Monsanto, and the Sandia Laboratories here in Albuquerque. These laboratories will participate in a "round robin" using the package I have described.

This experiment will provide experience in the use of an automated measurement system, providing insight into the potential of this approach for improving measurements, and increasing measurement capability of a laboratory without specialized training of personnel.

If this phase of the experiment is successful, the next phase will develop the ability of these laboratories to recalibrate mass standards from 1 kg to 1 mg in their own laboratories.

I am very enthusiastic about this effort to increase the capabilities of your laboratories for supporting your regulatory programs and for providing service to your local industry.

It has been a banner year for the state laboratory program. The level of competence of the metrologists continues to increase, facilities are being upgraded, and new measurement technology is being introduced.

Worthy of special recognition is the new state laboratory in North Carolina, dedicated in Raleigh during the past year. It is handsome on the outside and first class inside. I congratulate David Smith and his staff for this achievement.

Now, I want to turn to the work of this Conference in the development of uniform laws and regulations. The Conference can be proud of the effort embodied in NBS Handbook 130, which attests to your hard work. However, we need to remind ourselves that development of these standards by the Conference is only the first step in the process. Many members return home after the annual meeting and immediately start the process of putting the changes into laws and regulations. This is how the system is expected to operate.

Recently, the Conference adopted additions in the Uniform Weights and Measures Law that provide the basis for automatic adoption of changes in certain regulations, thereby making the job easier for the states in updating their regulations. The uniform laws and regulations are the key to national uniformity. I encourage every state that has not adopted them to do so as soon as possible.

In reviewing the record of adoption of these standards in the states, I was surprised to find out that many states have not adopted many of these standards, or have adopted only portions of the standards.

To take an example, most state programs include regulation of commodities. Forty-four states have adopted most of the provisions recommended in the Uniform Packaging and Labeling Regulation. (See Figure 1.) But our industries must operate nationwide. To the extent that all of the states have the same requirements, the marketplace is fairer and more viable. Why don't the other seven states put this important regulation on the books? Especially since it is directly related to the Federal regulation in the same area.

It is also true that 43 states have many of the method of sale requirements on the books. However, 23 states have not adopted any of the nonfood sections of the uniform regulation. (See Figure 2.) Again, this lack of uniformity in regulation poses difficulties to the conduct of commerce nationwide. Why haven't all of the states adopted the Uniform Regulation for the Method of Sale of Commodities in its entirety?

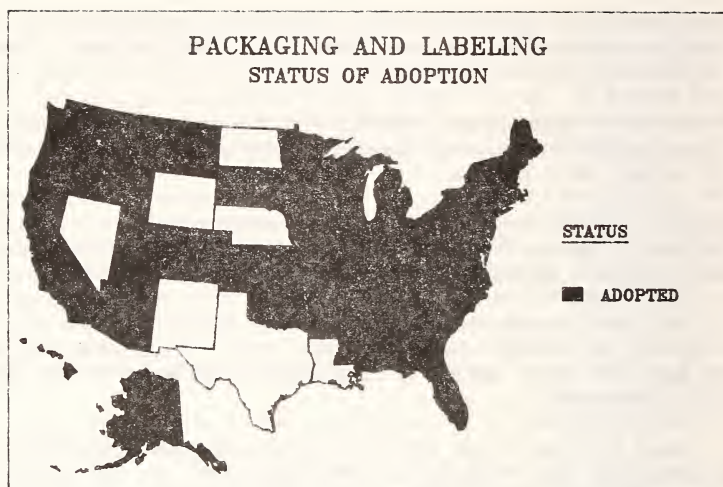


Figure 1

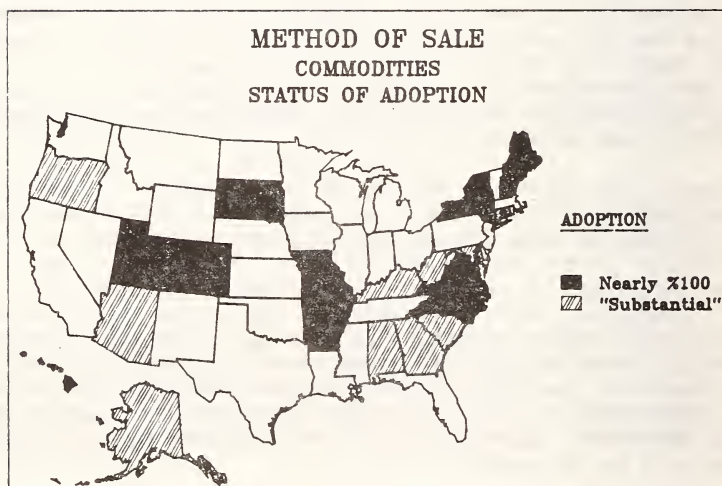


Figure 2

Even more surprising is the fact that only 16 states have any requirements in open dating and unit pricing. The records confirm their adoption by this body. If state and local officials voted for those regulations here, why haven't they had them adopted in their states? If these regulations contain features unacceptable by the states, why aren't requests for changes being proposed to the Committee on Laws and Regulations?

These uniform laws and regulations are intended to provide a uniform nationwide marketplace. To the extent that they are not adopted by every state, our system of weights and measures is not national and is not uniform, and that makes it more difficult to achieve the efficiency and productivity we so desperately need in our economy.

We have uniformity in the planning forum - the National Conference - but we lack complete uniformity in the adoption of weights and measures regulations at the state level.

Another example of follow-up at the state level is the degree of adoption of NBS Handbook 133. (See Figure 3.) The Handbook has been adopted by 19 states; 15 additional states are in the process of adopting it. This is encouraging. Thirty-four states are putting in place the action of this body. Why haven't the other 16 states taken similar steps? I am told that some jurisdictions still have old Handbook 67 on the books in spite of the fact that Handbook 67 is outdated and unacceptable in its treatment of statistics. NBS has refused to endorse the use of Handbook 67 for several years.

NBS Handbook 133 is the National Conference and industry standard now. It should be the regulatory standard in every state.

So, you can see, even though we have made a lot of progress in the areas of uniform laws and regulations, much remains to be done. Let us give it that extra push.

This brings me to one of my favorite programs; the National Type Evaluation Program (NTEP). I am told that the program is used by most of the states.

However, only 16 states have adopted the Uniform Regulation for National Type Evaluation or changed their statutes to recognize NTEP. (See Figure 4.) I really would prefer that the states explicitly recognize NTEP through changes in their statutes. Then, the states and the industry would have the confidence in the program we are all seeking, and it would become much more powerful to the United States in the international marketplace.

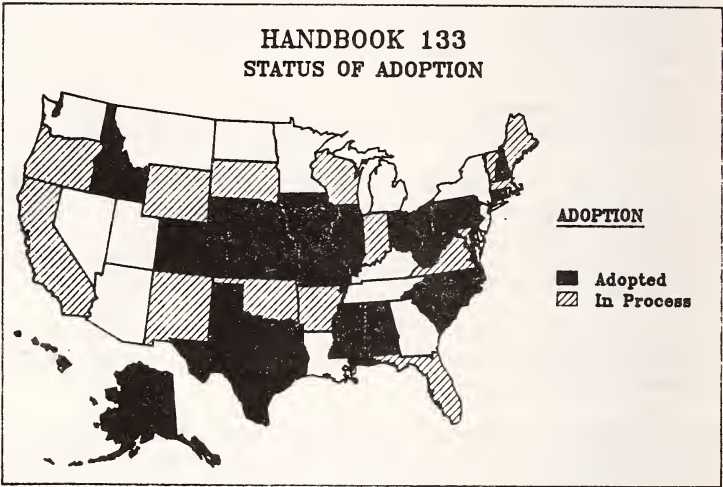


Figure 3

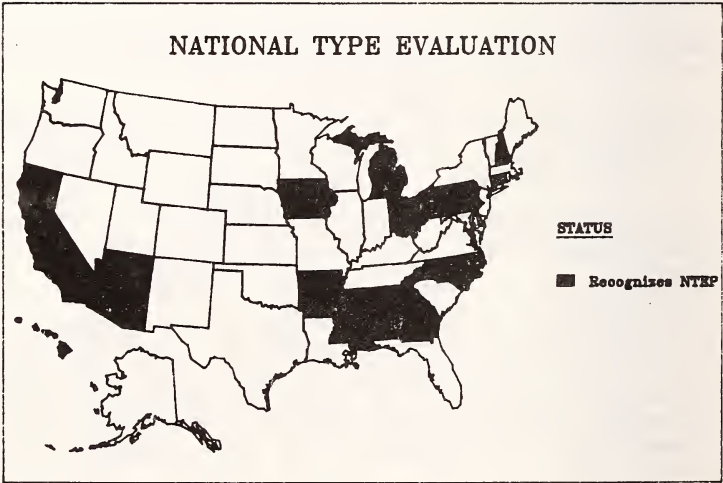


Figure 4

As a matter of record, the NTEP evaluation process resulted in the issuance of 87 certificates of conformance in 1985 and seems to be proceeding at about the same pace in 1986. That is great, but there is still a lot of work to be done to bring NTEP fully up to speed. I have already mentioned the importance of the official participation of all of the states in the program.

At the present time, NTEP has four testing or "participating" laboratories. They are, in addition to the NBS, California, Ohio, and the Federal Grain Inspection Service of the USDA. We are working to assist other state laboratories become qualified. We are also examining the possibility of recognizing manufacturer's facilities to augment the state laboratories, especially to avoid investing in expensive and specialized testing equipment.

Full implementation will take time. The development of the process, the recognition of additional laboratories, and the training of personnel must be done carefully so that NTEP maintains its integrity.

I want to recognize the participating laboratories and complement them for their dedication and high quality results. California was the pioneer state. Our relationship with Ez Delfino and his staff is continuing now with the new State Director, Darrell Guensler. They helped us all in testing the NTEP concept and bringing it to fruition. In 1985 they evaluated nearly 50% of the devices under NTEP. Ohio responded quickly to establish its capability and it is now able to work with industry in the Midwest. The Federal Grain Inspection Service provides the testing capability for those devices unique to the grain industry.

The National Training Program is now producing the finished product. Four modules have been published and put to use. Three more modules are nearing publication.

Those published are:

- Mechanical retail computing scales
- Electronic retail computing scales
- Package checking
- Electronic weighing and measuring systems.

Those to be published soon are:

- Vehicle and axle-load scales
- Meat beams and monorail scales

Retail motor fuel devices

Twenty states have used these modules in their training programs. Fourteen states have trained 434 officials in the electronics module alone. So far, 547 officials have received training using the first three modules published.

I am told that "veteran" officials as well as new officials are high in their praise of the quality of the modules and of the value of the training they have received. The industries that have examined the modules are also high in their praise.

All individuals taking training in a module and passing the final examination receive "continuing education units". In addition to the awarding of continuing education units, the National Conference has established a certification program for use by states to officially recognize those on their staffs who have successfully completed classroom and field training in the modules.

Nineteen states have enlisted in the NCWM certification Program. (See Figure 5.) Every state should consider participation. The certificates awarded to individual state officials are signed by the State Director and the Conference Executive Secretary.



Figure 5

The Conference office is busy issuing the certificates to individuals who have been certified under this joint state-NCWM program. I also encourage the associate members to use these modules. They contain much information which will be of value to your employees.

My congratulations to all of you who have participated in the development of these modules; especially to the members of the Committee on Education, Administration, and Consumer Affairs. They continue to devote many hours to the development of the program and the careful review of the work of the contractors drafts.

The last subject I am going to address is the health of the National Conference and the degree of support it receives from the weights and measures community. The membership of this Conference is its life blood. The participation of the members in the work of the committees is impressive. The active, the associate, and the advisory members are intimately involved.

However, the true nature of the representation of weights and measures interests needs to be explored. The associate membership constitutes 67% of the members. My hat is off to them for recognizing the importance of the Conference to them and their employers.

Less than 32% of the members are weights and measures officials - only 432. This is out of a total of an estimated 3000 officials in the country.

I have to ask the question: Why aren't many more of the state, local, and city officials members of the Conference? They should all be using Handbook 44, Handbook 133, and should be interested in the training they can get through the new training modules.

In fact, I am told that only 18% of those who have had the training under the modules are members of the Conference. What can we do to enroll the other 82% as members?

The Executive Committee asked the Executive Secretary to send membership materials to each State Director to encourage each one to promote the Conference. This was done, but the response was hardly noticeable.

Perhaps the Conference is considered a meeting place for the leadership, or that grassroots officials have nothing to add. I challenge that assumption. The health of weights and measures in the United States will be directly improved to the extent that we enlist all participants in the system as members of this Conference.

The National Conference of Weights and Measures is, and should be, recognized as a professional association. It should become to the weights and measures professionals what the American Medical Association is to doctors or the Institute of Electrical and Electronics Engineers is to electrical engineers.

A few more facts:

- The median active membership per state is 3.
- Half of the active membership is from only 8 states.
- Twelve states have only one member each.

I leave you with these observations. I think this is a serious matter. I urge your leadership to explore this situation and take effective steps to widen the membership.

I am establishing a "President's Award" to be presented each year at the Annual Meeting to recognize jurisdictions that have achieved specified goals in Conference membership.

The top level of recognition will be those states with 100% of their weights and measures officials as members of the Conference. Those states will be awarded a banner, using their state colors, and identifying them for this achievement.

Some states have 100% of their state officials as members, but their county and local jurisdictions do not have full membership. These states will be recognized for their achievement by the presentation of a certificate.

As I noted earlier, some of the state jurisdictions have achieved 100% membership. They will be recognized by the presentation of certificates attesting to this fact. I'll be formally making these awards later.

We have achieved much, and we are enjoying a "banner year". Let us keep going. Please give some attention to those areas I have singled out for greater effort; namely:

- o law and regulation promulgation at home;
- o adoption of NBS Handbook 133;
- o participation in the National Type Evaluation Program;
- o use of the training modules and participation in the state-Conference certification program; and
- o enrollment of state, county, and local officials in the National Conference.

I want to repeat that it is a pleasure to be with you again. Albuquerque, our host city, is both old and new. Dating from 1706, it reminds us of the early development of this continent leading up to the founding of our nation. Its vibrant and progressive newness adds a feeling of brightness and promise for our work here this week and in the year ahead.

These characteristics are similar to those of the National Conference. We are rich in history and have contributed much to the greatest marketplace in the world. Today we are a vibrant and effective body. We need to be more active promoters of our work throughout the states and their local jurisdictions. We still need to bring all of those who have an interest in the marketplace into this body.

Experiencing this rich history evidenced by Albuquerque will remind us of our potential. As we travel home, I hope that this experience will inspire us to new achievements in the year to come. Thank you, and good wishes in the coming year.

As I said in my address, it is important that we create an image of this Conference that encourages the "grassroots" weights and measures officials to seek membership. The President's Award is intended to promote that image.

At the time we were planning this presentation, two states qualified for the banner - all of their state and local weights and measures officials are Conference members.

Mr. Sam Hindsman of Arkansas, will you please join me at the podium?

Sam, congratulations on Arkansas being the first state to qualify for the President's Banner Award. Thank you for your leadership and notable support of this Conference.

Mr. Steve Malone of Nebraska, will you join me at the podium?

Steve, congratulations on Nebraska being the second state to qualify for the President's Award. Your state includes local jurisdiction membership. Thank you for your leadership and support.

For states having multiple jurisdictions, getting full membership is more difficult. Because of that, I am awarding a "Certificate" to any state with full membership at the state level.

Mr. John O'Neil of Kansas, will you join me at the podium?

John, I am pleased to present this certificate recognizing that all of the state officials of Kansas are members of this Conference.

Mr. Fred Gerk of New Mexico, as a result of having your staff registered and in attendance at this meeting, all of the State of New Mexico officials are now members. This means that New Mexico qualifies for a Banner Award. We will have one made for you and ready for presentation at the 72nd Annual Meeting. Congratulations.

STANDARDIZING STANDARDS - THE KEY TO EQUITY

Dr. George E. Mattimoe
Chairman, National Conference on Weights and Measures

My friends, as I appear before you today as chairman of this National Conference, let me assure you that it is with considerable feeling, including a sense of frustration, and a sense of melancholy at having had my chance at the "brass ring," and the realization that now it's all behind me. The mere fact that it is no longer something to which to aspire tends to be a bit unsettling, particularly since I have been advised that I'm now a legitimate candidate for membership in "the over-the-hill-gang," by Charley Greene.

However, for the opportunity, which afforded me one of the most meaningful years of my professional life, I thank you all, very much.

There are those of you without whom little would have been accomplished. Certainly the staff of OWM are numbered among these, for who among you can pick up a telephone and say, "Weights and Measures" as sensuously as Karen Barkley?

For that matter, who can admonish you for being tardy in the submission of supporting travel documents as Ann Heffernan, while at the same time making you feel that you are the most important person on earth? And she does this while planning for not just the next, but the next three National Conferences.

And there is Carroll. What would we do without Dr. Brickenkamp, for whom no accolade is adequate?

And Otto, for whom no description exists--but for whom I have the highest regard. Perhaps more than any other individual, Otto Warnlof has contributed continuously, over the years, to the advancement of measurement knowledge, and the application of that knowledge to the everyday enforcement of weights and measures. There are few who would question his contributions to the real world of legal metrology, or the major enhancements he has shepherded into being, through H-44. Otto, I'm proud to have had the privilege to work with you, over what in retrospect, seems like so many years, and indeed, has been. I'm even more proud to consider you a friend.

And my automated pen pal, Karl Newell, who is the only person I know who will tolerate my ineptitude on a computer, and of whom you'll hear more later.

And Dick Smith, who has to be recognized as the Instructor's Instructor, has probably indoctrinated more weights and measures officials in the fine art of measuring, via OWM documents, than most of us know. Dick, you and I have fought a lot of battles together, and I'd like you to know that, in my opinion, we won more than we lost, even if the issue itself on occasion was lost.

And Henry Oppermann has forever reminded me, and I mean this in the most complimentary sense, of the "mouse that roared." Long before E.F. Hutton, when Henry spoke, you did well to listen.

Steve Hasko is the personification of those Burma-Shave signs that used to be so evident along the side of the highways. You know the ones I mean; there were six or seven signs uniformly spaced some distance apart in a row that, bit by bit or sign by sign, invariably conveyed some profound statement, the effect of which was to cause you to wait with anticipation, even longingly to search out, the next bit of profound information. Steve, I'll miss working with you, and I still think that irradiating the transmission take-off gear that drives the taximeter was a good way to prevent fraudulent tampering.

And Joan Koenig, always the lady, even under the most trying circumstances, has to be acknowledged for her patience with, and guidance of the Committee on Education, Administration and Consumer Affairs. And, as newsletter editor.

If by chance I have missed identifying someone in the Office of Weights and Measures, with whom I've had the pleasure of working, forgive me, it was an unintended and thoughtless oversight, for which I apologize.

Oh yes, and then there is the Chief, and in this regard I'd like to go back in time to my first National Conference which I attended as a representative of industry. Bill Bussey was then Chief and, incidentally, very big on travelogues. He was followed by the "golden boy," Mac Jensen, who unquestionably forged this Conference into a meaningful entity. Mac was followed by Tom Stabler who had a number of problems plague him in his nearly two year-tenure, not the least of which was an unsuccessful attempt to recover a Russell Balance which had errantly been dropped overboard into Pusan Harbor, Korea. Tom was succeeded by Harold Wollin, who is a contemporary to most of us here and is rightfully held in high esteem. And then—we got Al. Most of you, here, appreciate the leadership, the expansive thinking, the humor, the dry, dry wit of the "The Fearless One".

It is customary, at this point in time, for the outgoing chairman to take credit for all that has happened during his tenure. Well I'm not going to do that for all too many obvious reasons. Not the least of which is that, as a body united, we accomplish things together, or we seldom accomplish them at all. You are all a party to what has or hasn't been done during this past year, and aside from recalling a few salient factors about these developments there is little more that needs be said.

Granted that the first computer link between the chairman and the Office of Weights and Measures was established and soon thereafter broadened to include Michigan, home of our next chairman, and then San Bernadino, California.

However, the exclusivity of this group soon dissipated with establishment of the electronic bulletin board which so many of you have hooked into from time to time and sampled its capabilities. The major part of this new bulletin board, in my opinion, will be the National Conference on Weights and Measures "Item File", by committee, which will consist of all items under consideration by the committee, including the description of the issue, who raised it, what has been done about it at the various committee meetings, and by the four regional associations. In short, one will be able to determine the history and current status of every issue contemplated for Conference consideration both before and after the Interim Meetings without waiting for the committee reports. Individuals are invited to add their comments to those in the file for consideration by committee members and ultimately the Conference as a whole, assuming committee concurrence. This should speed up the input process, increase the amount of work that can be handled by the respective committees particularly at the Interims, and assure those who are unable to attend these meetings of "their day in court." To me this is one of the more important items or activities to grow out of the initial efforts to establish a meaningful computer network. And we have it now in place without any diminution in the currently established due process safeguards.

The Legislative Liaison Committee has completed a first effort to prepare "The National Conference on Weights and Measures Story" in a planned and professional manner. This effort reflects the growing stature of the Conference including its recognition by other agencies and jurisdictions. Telling this story of the most efficient of Federal/state cooperative effort relates the role, of one to the other, and of both to the public, the industry and the legislative bodies, and in part was conceived to alert or advise particularly our Congress, of our existing capabilities. This represents, yet another "tool" for our use in getting attention and telling our story. My special thanks go out to the committee and its chairman, Don Stagg, for their effort in so timely completing this project.

When first I considered a theme for this year's Conference I thought, "oh my", what difference does it make? Then I thought about all the discussion, planning, thought, and just plain work that went into the processing of each action that ultimately becomes a consensus standard of this Conference and concluded that, "uniformity is to equity what standards are to uniformity". Then with a little literary larceny, I lifted the theme for this year's Conference from one of Dr. Allen Astin's many profound presentations.

One must ask: "To what avail is all this undertaking, if, for reasons of one's liking or disliking, his jurisdiction would or would not adopt a Conference consensus standard?" There had to be a more meaningful criterion than "like or dislike," and this thought process begat the theme, "Standardizing Standards-The Key To Equity".

Three short weeks ago, our Nation experienced a very great resurgence of patriotic involvement as we rededicated the Statue of Liberty. Present at that dedication ceremony was a recent emigrant from Southeast Asia, a young lady, Hue Cao, who read her dissertation on what the Statue of

Liberty meant to her. There were the usual detractors, the bad mouths who were offended for reasons, real or imagined, that gave them an opportunity to complain about the majority doing something--about the majority becoming involved. Their clouded perception would have barred the involvement of one of the "tall ships" because it had an unsavory history under different national registry, and because they determined in their own minds that we already had too many emigrants - that allowing more to enter this country would only aggravate our unemployment situation. Interestingly enough I have been unable to confirm the presence of one single American aborigine among these minority detractors. I couldn't help but think about how these newcomers to our shores are frequently faulted for doing exactly what our forbearers did when they came to America. They speak funny, take risks, make decisions, and above all they become involved. They work long and they work hard, they fly in the face of convention, and they dare to do things. In short, they exhibit more of the old American pioneering spirit than do many of us more comfortable Americans.

I'm not sure that the Conference represents an exact parallel, but there is certainly room for some soul searching. There is really no other reason to be here, than to become involved. These comments don't apply to those thirty or so of you who are forever involved in all that the Conference does, but if you've found yourself voting on a subject that you perhaps felt you didn't fully understand, then that's an indication that you should consider becoming more involved. This is not someone else's Conference, it's yours. And if you want it to continue that way, involvement is excellent insurance.

During the year, it was my pleasure to attend each of the regional association meetings except that of the new Central Region. What I saw, heard, and participated in was truly encouraging. I really believe that the regional associations have exhibited a renewed degree of interest and concern over their role in the national picture of Conference involvement. And, that is as it should be, for leadership at the regional level is but a step away from leadership at the national. In this respect I feel that the national health is good because that of the regionals is good.

There is another issue that is some what indelicate, but which is vital to all of our considerations, and that is the economics of any proposal. There is no question but that we must always take economics into consideration; however, it must be balanced against equity. It is my opinion that to conclude that correct measurement in a given area should not be pursued because it would be too expensive to require changing equipment over a period of time ill becomes this organization. It is true that our function is not to stifle or impede industrial development. The free market should in no way be inhibited or constrained by actions or inactions of this Conference, taken under the guise of necessary regulatory requirements. It is inconsistent with the Conference motto that "Equity Shall Prevail." On occasion the "cost" of correct measurement has been presented as an argument against adopting a proposal, when the "identified cost" was in reality a surmised inconvenience to the regulator. On a priority consideration list, relating to the advisability of adopting or not adopting a given proposal, using a scale of one to ten, the inconvenience to the regulator should be considered as a zero.

The National Type Evaluation Program is a well established concept, one in which every segment of our industries has been aware for many years and indeed, one in which most have even participated. I'm encouraged that, as an industry, most of the old-line gasoline pump and petroleum-products equipment manufacturers now participate in NTEP and, indeed, have nearly swamped Henry with their requests for Certificates of Conformance. I consider this a real plus - major constituents of industry working to provide national uniformity.

Every officer, every chairperson and member of the numerous standing, annual and technical committees, and the task forces, every one of you has demonstrated your support of the goals of this Conference, and your dedication to correct measurement, and I thank you.

To Shirley, my wife, who has suffered perhaps even more than Al, Dave, and all the rest of the Bureau staff during my term as Conference chairman, my warmest "aloha".

And to Dr. Ernest Ambler, a very special thanks for his unwavering support of the National Conference on Weights and Measures. Without question, the relationship that he has established between the Bureau--his office in particular--and the Conference is very special, and certainly one without which we would be hard pressed to have achieved the successes that we have.

And thank you, Dr. Stanley Warshaw. Not alone for your many pearls of wisdom, but for your advice and encouraging counsel, and particularly for the manner in which it was given. Stan you make life interesting as well as humorously meaningful. Consistent with your last computer epistle to me wherein you advised of Horace's utterance, which I should like to paraphrase as my last comment, "Regulation Without Necessity Will Fall of Its Own Bureaucratic Weight".

Thank you all.

HONOR AWARDS PRESENTATIONS

Dr. Ernest Ambler, President of the Conference, presented Honor Awards to members of the Conference who, by attending the 71st 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

William H. Braun	Procter and Gamble Company
Carl P. Conrad	State of New Jersey
John J. Elengo, Jr.	Revere Corporation of America
Fred A. Gerk	State of New Mexico
Edward C. Heffron	State of Michigan
W. Terry James	Cardinal Scale Mfg. Company
Chip Kloos	Beatrice/Hunt Wesson Foods
Frank A. Kosits	Retired, Cuyahoga County, Ohio
Wesley R. Mossberg	Los Angeles County, CA
Frank Nagele	State of Michigan
Henry V. Oppermann	National Bureau of Standards
Tom Scott	State of North Carolina
Edward P. Skluzacek	State of Minnesota
Albert D. Tholen	National Bureau of Standards
James H. Akey	State of Kansas
Andrew B. Moody, Jr.	City of Richmond, Virginia
Patrick E. Nichols	Alameda County, California
Raymond R. Wells	Sensitive Measurement, Inc.

20 YEARS

Walter F. Gerdorn, Jr.	Tokheim Corporation
Charles W. Moore	Madison County, Indiana

CERTIFICATES OF APPRECIATION

Dr. George Mattimoe, Conference Chairman, presented Certificates of Appreciation to members of the Standing Committees who had completed their tenure on each committee, and one member who is retiring.

Fred A. Gerk
Committee on Specifications and Tolerances

Robert Probst, Retiring
Committee on Specifications and Tolerances

Don E. Staggs
Committee on Laws and Regulations

N. David Smith
Committee on Liaison

Bruce R. Niebergall
Committee on Education, Administration, and
Consumer Affairs

John Bartfai
Executive Committee

Robert Walker
Executive Committee

Frank Nagele
Executive Committee

STANDING COMMITTEE REPORTS

REPORT OF THE EXECUTIVE COMMITTEE

George E. Mattimoe, Chairman
Administrator of Measurement Standards
State of Hawaii

REFERENCE

KEY NO.

100 INTRODUCTION

The Executive Committee submitted its Final Report to the 71st Annual Meeting of the National Conference on Weights and Measures (NCWM). The Report consisted of the Interim Report offered in the "NCWM Program and Committee Reports" as amended by Addendum Sheets issued during the Annual Meeting.

This Report was presented in two parts: Part I is the report as the NCWM Executive Committee; Part II is the report of the Executive Committee operating as the NTEP Board of Governors.

Items are grouped into the following series for ease of reference:

ADMINISTRATION AND POLICY	101 Series
MEMBERSHIP	102 Series
OPERATIONS	103 Series
PROGRAM	104 Series
NATIONAL TYPE EVALUATION PROGRAM	105 Series

Table A identifies all of the items contained in the Report by Reference Key Number, Item Title, and Page Number.

Voting items are identified in **bold face type** as well as a suffix "V" (i.e., **101-4 V**). Withdrawn items are identified by a suffix "W". Items without a suffix are informational.

Executive Committee

The Report contains four appendices which are related to specific Reference Key Numbers as follows:

A.	Operating Budget	Item 103-3
B.	Task Force on Commodity Requirements Report	Item 104-4
C.	Memorandum of Understanding	Item 104-4
D.	Task Force on Information Systems Report	Item 104-5
E.	NTEP Policy and Procedures	Item 105-2

Following Table A, each item is described in detail in numerical sequence of the Reference Key Number.

Throughout the report, recommended changes to NCWM or NBS publications are shown as follows: wording to be deleted is shown ~~lined out~~; wording to be added is underlined; sections being changed are indented and printed in **bold face type**.

ORDER OF PRESENTATION

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

101-2A Special Recognition and Awards - Waiver of Registration Fee

This item was adopted (State Representatives 43 Yes, 0 No; Delegates 74 Yes, 0 No).

101-2B Special Recognition and Awards - Special Recognition

This item was adopted (State Representatives 45 Yes, 0 No; Delegates 73 Yes, 0 No).

101-4 Nominating Committee

This item was adopted (State Representatives 45 Yes, 0 No; Delegates 72 Yes, 1 No).

Item 105-2 was withdrawn in its entirety (See discussion under Item 105-2 for details).

After the individual voting items were acted upon, the report was adopted in its entirety by the membership.

Table A
REFERENCE KEY ITEMS AND INDEX

Reference Key No.	Title of Item	Page
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105-7	Laboratory Authorization	65
105-8	NTEP Brochure	66
105-9	Load Cell Intercomparison	66

DETAILS OF ALL ITEMS
(in order by Reference Key Number)

**REFERENCE
KEY NO.**

PART I
ADMINISTRATION AND POLICY

101-1 POLICY AND GUIDELINES

A draft of NCWM Publication 3, "National Conference on Weights and Measures - Policies and Guidelines", is being reviewed. The draft contains all of the material selected by the appropriate NCWM Committees from the published proceedings of Annual Meetings from 1971 through 1985. The results of the review will be incorporated into the final document which is scheduled for publication in 1986.

**101-2A V SPECIAL RECOGNITION AND AWARDS - Waiver of
Registration Fee.**

(This item was adopted)

At the present time, the Constitution, Article III, recognizes individuals "who have retired from Federal, State, county, or city weights and measures employment" as Advisory Members. Many of these Advisory Members look forward to attending the Annual Meeting where their attendance contributes to the collective good health and achievement of the Conference. In recognition of the contributions made by these individuals, the waiving of the

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payment of the registration fee by them is recommended. It is recommended that the following new section be added to the Bylaws, Article II - Fees, Membership Records on page 8:

SECTION 5 - WAIVER OF REGISTRATION FEE

Advisory Members who have retired from Federal, State, county, or city weights and measures employment and have been Active Members of the NCWM for ten or more years shall not be subject to the payment of the Registration Fee for attendance at the Annual Meeting.

101-2B V SPECIAL RECOGNITION AND AWARDS - Special Recognition.

(This item was adopted)

During the past year, the Chairman presented a plaque, inscribed with appropriate wording, to each of three retiring weights and measures officials in recognition of their special service to the National Conference on Weights and Measures over many years. Each presentation was made at public ceremonies of the recipients' peers, and was well received. The three individuals recognized were Bill Sullivan (Seattle, Washington), Sydney Andrews (Florida), and Stan Darsey (Florida).

Based on this experience, the Chairman recommended that the Executive Committee consider the establishment of a policy regarding the recognition of members at the time of retirement or career change from weights and measures to an unrelated field. The following policy is recommended for adoption:

Active and Associate Members having ten or more years of membership in the NCWM, and who have rendered special service to the NCWM, may, at the time of their retirement from active weights and measures employment, be selected by the Executive Committee to receive an inscribed plaque attesting to that special service. The plaque will be presented by the Chairman or designee at the appropriate time and place.

Recommendations for this award may be made by (1) any member of the Conference, or (2) the Regional Associations through their Chairmen. Recommendations should be in writing and addressed to the Executive Committee.

101-3 VOTING--CONSEQUENCES

Some difficulty was encountered during the voting session at the 70th Annual Meeting on Item 302-13 of the Committee on Specifications and Tolerances. The item was initially defeated, presumably as a result of the lack of understanding of the consequences of defeat. After the consequences were explained to the membership, the item passed.

A recommendation was made that some wording should be added to the discussion of potentially critical items in the S&T report such as a concise explanation, with example(s) if necessary, of the consequence of passing or defeating the items.

The Executive Committee discussed this problem and the recommended solution. A review of the voting during the past several Annual Meetings led the Executive Committee to observe that:

- the voting has been extremely free of problems of this type, and
- the incident related to Item 302-13 was, in fact, very unusual.

The Executive Committee concluded that the leadership will be able to deal with this type of problem, if it arises again, under Robert's or the NCWM Rules of Order. Therefore, no change in rules is recommended.

101-4 V NOMINATING COMMITTEE

(This item was adopted)

The Nominating Committee is composed of seven (7) members "consisting of the most recent active past chairman as Committee Chairman and six (6) active members" (Constitution, Article IV, Section 2B).

Recent Chairmen have followed a precedent established several years ago of appointing all past active NCWM Chairmen to the Nominating Committee. As a result, six or seven of the members of the Committee each year have been past chairmen. None of the active past chairmen have been from the Northeastern Region.

The Northeastern Weights and Measures Association, believing that the membership of the Nominating Committee should include representation from all four Regions, made a recommendation for consideration by the Executive Committee to change the Constitution and Bylaws to read:

"The Chairman shall appoint a Nominating Committee consisting of the most recent past chairman as Committee Chairman and four (4) active members, one from each of the four regions."

The merit of the recommendation is recognized; however, it was desirable to maintain the membership of the Committee at seven. The following rewording to Article IV - B.1. Nominations and Elections, on page 4 is recommended:

The Chairman shall appoint a Nominating Committee consisting of the most recent active past chairman as Committee Chairman and six (6) active members, to include at least one (1) member representing each of the four Regions. The Nominating Committee shall submit one name for each elective office and present its recommendations as a slate in its report to the Conference.

MEMBERSHIP

102-1 RECOGNITION OF ASSOCIATE MEMBERS

A Directory of Associate Members, arranged alphabetically by company name and by individual's name, was printed and distributed to members as "Directory of Associate Membership 1986, NBSIR 86-3374", NCWM Publication #9 in April 1986.

The Executive Committee will continue to promote the involvement of the Associate Membership in the work of the NCWM and to explore opportunities to broaden that role.

102-2 MEMBERSHIP OPTIONS

Promoting Membership of State and Local Officials

Of the approximately 3000 weights and measures officials nationwide, over 2800 are listed in the latest Directory. Of that number, only about 450 are actually members of the NCWM.

The Executive Secretary reported that he had sent 50 copies of the Membership Brochure to each State Director for use in promoting membership. He reported that three states (Arkansas, Nebraska, and Missouri) have since returned membership applications and a check to cover the \$35 membership fee for everyone on the state staff. In those cases, the State Director knows that his entire staff will receive all the handbooks and NCWM correspondence, which is expected to lead to a better and more uniformly trained and aware staff. Other than this significant addition to the membership roles, most new members have been from the private sector.

The present composition of the Conference includes 595 active and 952 associate members. Recent growth has been primarily in the associate membership. If the estimate of 3000 officials nationwide is correct, then less than 20% of them are members.

Dr. Ambler, in addressing the 70th annual meeting last year, emphasized the importance of getting the results of the NCWM to the "grassroots." Three states were able to follow through on the President's recommendation and enlisted all of the officials in their states as members of the NCWM. This year, Dr. Ambler is expanding on that theme by recommending that similar efforts be made to attract all weights and measures officials to join the NCWM. Membership of all of a jurisdiction's officials ensures that they will receive all of the products of the NCWM. This will greatly increase the likelihood that the work of the NCWM will reach the "grassroots" and that the regulation of weights and measures nationwide will be uniform.

The President's Award

As an incentive to other jurisdictions to follow the example set by the first three states, Dr. Ambler has established the "President's Award". The award will be presented annually at the Annual Meeting to recognize jurisdictions "that have achieved specified goals in Conference membership". There are two levels of recognition under this award:

1. Banner. The top award will be a banner presented to any state in which all of the weights and measures officials (state and local jurisdictions) are members of the Conference. The banner will be accompanied with a certificate for a state to post in the office. The banner will be brought to the Annual Meeting each year to be displayed at the front of the general session room. A ribbon will be added each succeeding year that a state qualifies for this award. (Arkansas and Nebraska qualify for this award.)
2. Certificate. A certificate will be presented to any state in which all of the weights and measures officials on the state staff are members of the Conference. That state will become eligible for award of a banner when all of the members of its local jurisdictions become Conference members. (Missouri qualifies for this award.)

Promoting Use of Publications

An objective of the NCWM is to get the latest handbooks and related materials into the hands of every weights and measures official in the United States. The Committee recommends that the states investigate the possibility of following the example of the three states identified above. Some states can justify expenditure of funds on the basis that "membership" provides the publications and related materials needed to perform the regulatory function uniformly and following the most current legal and technical methods.

The Committee continued to review current policy and explore alternatives to attaining this objective. One 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.

A "Basic Membership" for a fee of \$10.00 which would provide the Weights and Measures Directory, Newsletter, Tech Memos, all meeting announcements, programs, and NCWM proceedings.

A "Professional Package, Commodities" for an additional fee of \$15.00 which would provide the benefits of the "Basic Membership" plus all commodity-related handbooks (HB 130, HB 133, HB 133-Field).

Executive Committee

A "Professional Package, Devices" for an additional fee of \$15.00 which would provide the benefits of the "Basic Membership" plus all device-related handbooks (HB 44, HB 112, HB 130).

A "Professional Package, Combined" for a fee of \$35.00 which would provide all the benefits of the three packages.

The Executive Committee will continue to study this issue and solicits comments from the membership.

102-3 PROMOTIONAL ACTIVITIES

1. The Newsletter was mailed to everyone on the NCWM mailing list, rather than only to members. The back page of the Newsletter was a membership blank. There was no noticeable increase in membership resulting from this mass mailing. Future copies of the Newsletter will be mailed only to members.
2. A supply of the NCWM membership brochures (with membership application form) was provided to each State Director for use in promoting membership in the Conference. The results of this action are reported in Item 102-2.
3. A supply of tie tacs/lapel pins and ties was bought and offered for sale at the 70th Annual Meeting in July 1985 as well as at other meetings. Sale of these items has been good; tie tacs have been reordered.

OPERATIONS

103-1 APPOINTMENTS, RESIGNATIONS, ASSIGNMENTS

The Chairman reported on all organizational actions taken and appointments made for the current year.

The following additional actions were taken during the week of the Interim Meeting.

Chaplain

The Chairman appointed Mr. Martin T. Coile as the Chaplain of the NCWM to fill the vacancy created by the retirement of Mr. Francis W. Daniels, Wayne County, Indiana. Mr. Coile is the Director, Weights and Measures Laboratory, State of Georgia.

Vice Chairman

The Executive Committee appointed Mr. Edison J. Stephens to fill the vacancy created by the resignation of Mr. Charles D. Tandy, Alaska. Mr. Stephens is Deputy Commissioner, Department of Agriculture, State of Utah.

Executive Committee

The Executive Committee appointed Mr. James M. O'Connor to fill the vacancy on the Executive Committee created by the election of Mr. Frank Nagele, Michigan, as the Chairman-Elect of the NCWM. Mr. O'Connor is Supervisor, Weights and Measures, State of Iowa.

103-2 FINANCE, FINANCIAL REPORT

The Treasurer presented the financial report through December 31, 1985. The total income and disbursements for this period are within the amounts budgeted. See the Treasurer's Report on page 245.

103-3 BUDGET DEVELOPMENT

The Executive Secretary reported on the proposed budget for the fiscal year July 1, 1986, through June 30, 1987. The Budget Review Committee reviewed the draft budget and made several comments. In addressing these comments, the Executive Committee made the following changes which are contained in the proposed budget (Appendix A).

Account 1.1. Registration Fees

The estimated registration of 340 for the 71st Annual Meeting to be held in Albuquerque, NM was questioned because it is higher than the registration at the 69th (338) and the 70th (314) Annual Meetings in Boston and Washington, D.C., respectively. The Executive Committee decided to retain the original estimate of 340 but is prepared to modify the Budget if the registration is lower than the estimated 340. The Annual Meeting is at the beginning of the Fiscal Year and modifications can be made before significant disbursements are incurred.

Account 1.3. Training Modules

The arithmetic was corrected to change the total estimated receipts from sale of Inspectors Manuals from \$5,650 to \$6,650, and the total estimated income account from \$7,000 to \$8,000.

Account 1.6. Special Events

The last sentence of the paragraph was changed to correct the reference from Account 13.0 to Account 10.0.

Total Budgeted Income

The Total Budgeted Income figure was changed from \$94,100 to \$95,100 to correct for the error noted above. The Total Budgeted Disbursements figure was changed from \$94,100 to \$95,100 to present a balanced budget. The following changes were made to Disbursement Accounts to reach a balanced budget.

Executive Committee

Account 4.0. Committee Operations

Reduce estimated expense of the Education Committee from \$9,000 to \$7,500. Delete the estimated expense of the Task Force on Motor Fuels because their work will have been completed.

103-4 NCWM FORMS

Several new standardized NCWM forms have been developed. Those now being used in the administration of the NCWM are:

- #1 Cover Sheet for Contract
- #2 Amendment/Modification of Contract
- #3 Committee Ballot
- #4 Policy and Guidelines Format
- #5 Available for assignment to a new form
- #6 National Training Program (NTP) Request for Waiver of Copyright
- #7a NTP Letter of Agreement (with state)
- #7b NTP Letter of Agreement (with other jurisdiction)
- #8 NTP Annual Report
- #9 National Type Evaluation Program (NTEP) Certificate of Conformance
- #10 Purchase Order/Contract (small)
- #11 NTP Request for Individual Certification

103-5 NCWM PUBLICATIONS

In the listing below, an asterisk identifies those publications for which changes are being proposed in the Executive Committee Report. Numbers in parentheses refer to the Reference Key Numbers of the report where the proposed changes are described.

- #1 NCWM Constitution and Bylaws.* (101-2A, 101-4)
- #2 Weights and Measures Directory 1986 Edition.
- #3 NCWM Policy and Guidelines.* (101-2B)
- #4 NTEP Policy and Procedures.* (105-1)
- #5 NTEP Index of Evaluations.* (105-3)
- #6 NTEP Program Brochure.* (105-6)
- #7 Weights and Measures Week Guide 1986 Edition.
- #8 NTEP and Its Relationship to the W&M Law, HB44, and the New Scales Code
- #9 Directory - Associate Members.* (102-1)
- #10 Meeting and Publication Planning, SOP, and Schedule. (Under development)
- #11 National Training Program.

103-6 REPORT OF THE NOMINATING COMMITTEE

Mr. Sam Hindsman, Chairman of the Nominating Committee presented the Committee report to the Executive Committee. See Report of the Nominating Committee.

PROGRAM

104-1 PLANNING FOR ANNUAL MEETINGS

72nd Annual Meeting, July 19 - 24, 1987

A contract has been signed with the Excelsior Hotel in downtown Little Rock, Arkansas for the annual meeting of July 19-24, 1987.

<u>Address:</u>	Three Statehouse Plaza Little Rock, AR 72201
<u>Telephone:</u>	(501) 375-5000 Telex # 752270 Out-of-State Toll Free Number is 1-800-527-1745
<u>Parking:</u>	Parking in the connected parking building is complimentary for hotel guests.
<u>Room Rates:</u>	\$66.00 single or double, plus 7% tax. Check-in time is 3:00 p.m.; check-out time is 12:00 noon.

The hotel is first class, contains 420 rooms, and sits atop the new Statehouse Convention Center. It has its own conference facilities which will accommodate our meeting. The hotel is connected to a building containing a 642-car parking garage, the Excelsior Health Club, and numerous retail shops. There are five food and beverage facilities in the hotel. Adjacent to the lobby is a group of retail stores including a gift shop, a ladies boutique, a beauty/barber shop, and a car rental agency.

The hotel provides complimentary shuttle service to and from the airport which is only 15 minutes from the hotel.

73rd Annual Meeting, July 17 - 22, 1988

The 73rd Annual Meeting is planned for Grand Rapids at the Amway Grand Plaza Hotel (a AAA 5-Diamond and Mobile 4-Star facility). The hotel is in the center of the city, on the Grand River, across from the Gerald Ford Presidential Museum. Grand Rapids is in the center of a vacation area including Holland, Michigan. Lake Michigan is within an easy driving distance.

74th Annual Meeting, 1989

Seattle has been proposed as the site of the 74th Annual Meeting in 1989. The Executive Secretary has visited the city and reviewed several hotels. He reported that most of the hotels visited can accommodate the NCWM comfortably and are conveniently located in downtown Seattle within walking distance of the waterfront, shopping, and restaurants.

Executive Committee

Future Meetings, Candidate Locations

Proposals have been received to host the National Conference Annual Meeting in the following locations: Columbus, Ohio; Albany, New York; and Hawaii. No decisions have been made regarding these offers.

104-2 CENTRAL WEIGHTS AND MEASURES ASSOCIATION

The Constitution and Bylaws to govern the Central Weights and Measures Association was agreed to by the officers of the Northwest Weights and Measures Association (NWWMA) at its Interim Meeting in October 1985. The Central Weights and Measures Association was officially organized and assumed the assets and the liabilities of the Northwestern Weights and Measures Association at the meeting held in June 1986.

104-3 NATIONAL TRAINING PROGRAM

The Committee on Education, Administration, and Consumer Affairs reported to the Executive Committee on the status of the National Training Program, including the financial status 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. The Executive Committee requested the Committee on Education, Administration, and Consumer Affairs to prepare a plan for funding the development of the training program until its completion, for submission to the Executive Committee prior to the Annual Meeting.

See the Report of the Committee on Education, Administration, and Consumer Affairs for details.

104-4 TASK FORCE ON COMMODITY REQUIREMENTS

At the January 1986 Interim Meeting, Chairman Richard Thompson (Maryland) reported on the progress of the Task Force on Commodity Requirements. The Executive Committee was requested to and did approve (1) the concept of the approach taken by the Task Force and, (2) the conduct of a pilot test of that concept by several states.

Approximately 20 jurisdictions, both state and local, have volunteered to participate in the Pilot Study. A draft of the procedures has been mailed to all 50 state directors and the local weights and measures jurisdictions that have volunteered, because any state having meat, poultry, or flour packaging plants within its boundaries may be called upon to visit a packaging plant.

A meeting of the Task Force members and pilot state volunteers was held on July 22 at the Annual Meeting. The pilot study will begin on August 15, 1986, and continue until November 15, 1986.

See Appendix B for the details of the Report of the Task Force.

104-5 TASK FORCE ON INFORMATION SYSTEMS

Mr. Newell recently joined the staff of the Office of Weights and Measures and assumed the role of technical advisor to this Task Force from Mrs. Joan Koenig thus freeing her to devote more time to the development of the training modules and to the Committee on Education, Administration, and Consumer Affairs.

OWM purchased a new computer to function as a "Bulletin Board" for members' use. It is accessible to any one at the present time (301 869-1665). When fully operational, it will be limited in access to members of the NCWM. The Bulletin Board contains information about weights and measures activities including:

- Identification of W&M publications and how to obtain copies;
- "Often asked" questions with answers;
- NCWM and Regional Association Officers, committee memberships;
- Working files of the standing committees
- Selected position papers, studies, and issues descriptions.

See Appendix D for details of this Report.

104-6 LEGISLATIVE LIAISON COMMITTEE

Mr. Don Stagg reported on the status of the Legislative Liaison Committee including the objectives and work plan of the group. He distributed a draft NCWM brochure for review and comments.

104-7 REPORT ON OIML

Mr. David Edgerly, NBS, reported on the status and activities of the International Organization of Legal Metrology (OIML). See the Report of the Committee on Liaison for details.

104-8 OFFICE OF WEIGHTS AND MEASURES

Mr. Albert Tholen reported on the status of the program of the Office of Weights and Measures. See the Report of the Committee on Liaison for details.

104-9 REVIEW OF DOCUMENTS (HANDBOOK 44)

At the January 1986 Interim Meeting, comments regarding NBS Handbook 44 were discussed.

Executive Committee

The possibility of making Handbook 44 easier to use by the field inspector and, at the same time, clearly identifying those requirements that are applicable under NTEP evaluation and not expected to be applied by the state and local jurisdictions was discussed. Comments were received that some states which accept NTEP Certificates of Conformance need to identify those tests that field inspectors do not normally conduct.

Mr. Joe Swanson volunteered to explore alternatives to making the Handbook easier to use and for separately identifying those sections which require NTEP evaluation only. The Chairman accepted Mr. Swanson's offer and asked him to proceed, involving the Committee on Specifications and Tolerances when appropriate, with the objective of having a draft for review by the Executive Committee at the 71st Annual Meeting.

At the Annual Meeting, The Committee on Specifications and Tolerances recommended, and the Conference adopted a proposal to reorganize the Handbook. See Item 360-4 of the S&T Report for details.

No further plans have been made for reorganization of the Handbook until:

1. the NTEP Handbook is published; and
2. the device-related modules of the National Training Program are published.

PART II NATIONAL TYPE EVALUATION PROGRAM (Board of Governors)

105-1 ORGANIZATION

The Chairman reassigned the Technical Committee on NTEP from the Committee on Specifications and Tolerances to the Executive Committee (Board of Governors). This change does not require a vote by the membership because it is within the powers of the Chairman to assign (and reassign) committees and task forces.

105-2 W NTEP, POLICY AND PROCEDURES

Action at the Annual Meeting, July 1986

The NTEP has been operating using the procedures approved by the NCWM at the previous Annual Meetings. Evaluation of small-capacity scales for conformance to the requirements of the new scales code including the influence factors has progressed smoothly. Evaluation of large-capacity scales introduces difficulties which have not yet been resolved.

Item 105-2 of the Interim Report dealt primarily with proposals for evaluation of large capacity scales. At the Annual Meeting, Item 105-2, including its sub-items, was withdrawn as a voting item. This was done in order to provide the opportunity for the NCWM membership to study all of the recommendations and comments received before asking for them to vote.

The information available will be packaged and sent to the membership prior to the Interim Meeting in January 1987, at which time, the recommendations to be made to the membership for consideration at the 72nd Annual Meeting in July 1987 will be formulated. In the meantime, the National Type Evaluation Program will test large capacity scales using:

1. The "ad hoc" provisions of NCWM Publication #4, "National Type Evaluation Program, Policy and Procedures, 1984" as revised July 18, 1985, and
2. The report of the Technical Committee on National Type Evaluation dated June 25-26, 1986.

Items 105-2A through 105-2H, although withdrawn as action items from the report presented to the membership, are reproduced in this final report for reference in preparation for the January, 1987 Interim Meeting when all of these subjects will be discussed.

Action at the Interim Meeting, January, 1986

The Executive Committee acted on many recommendations regarding clarification and expansion of the NTEP Policy and Procedures. The recommended changes were made to an annotated version of NCWM Publication 4, "NTEP Policy and Procedures" contained in Appendix E*, so that they can be read and reviewed in the context of the entire publication. The changes include rearrangement of sections, addition of new sections, and editing. The non-editorial changes are referenced below; however, the reader should read the actual language proposed by referring to Appendix E.

In Appendix E, the proposed changes are identified by ~~crossing through~~ language to be deleted, and by underlining the language to be added. The general nature of the proposed changes is stated in parentheses at the beginning of affected Sections or paragraphs as follows:

(Section X rewritten as Section P to clarify - - - -)

105-2A W DEFINITIONS (SECTION A)

This section was moved from Section C to Section A in order to acquaint the reader with the terminology used throughout the publication before reading the policies and procedures. Paragraph 4 is changed to include the National Bureau of Standards and Federal laboratories under the definition. This was an oversight in the original publication.

* Appendix E was withdrawn for consideration by the membership at the 71st Annual Meeting. However, it is retained as part of this Report for the record and for use in preparation for the January 1987 Interim Meeting when all of the subjects will be discussed.

Executive Committee

105-2B W TYPE EVALUATION PROCESS (SECTION B)

This section was formerly Section A. It has been expanded by identifying two steps of the process, which were originally omitted.

105-2C W ADMINISTRATION OF THE PROGRAM (SECTION C)

This section is new and explains the roles of the Board of Governors, the NTEP Advisory Committee, the Technical Committee on National Type Evaluation, and the National Bureau of Standards.

105-2D W REQUEST FOR TYPE EVALUATION (SECTION D)

This section is new and describes the procedure to be followed when applying for a type evaluation.

105-2E W STEPS IN THE TYPE EVALUATION PROCESS (SECTION E)

This section was formerly Section B. It has been significantly expanded to clarify the decision process to be followed in deciding if a request is valid under NTEP, and the functions and options of Participating Laboratories.

The underlying policy is to use all information and facilities available to the Participating Laboratories in order to minimize the cost of evaluation, including capital investment and operating expenses.

Paragraph 1 is new and defines the classes of, and basic conditions under which, devices will be accepted for evaluation.

Paragraphs 3 and 4.a. are largely new and elaborate on the considerations that will enter into the decision on the choice of testing facilities. Most of the material in former Section H.3. is incorporated in these paragraphs.

105-2F W EXTENT OF EVALUATION (SECTION F)

Paragraph 1 contains new material addressing conditions that the Participating Laboratory may consider, thereby reducing the scope of the testing necessary to complete a full evaluation. Conditions include: device size, configuration, application, immunity to the effect of selected influence factors, prior evaluation of main components/elements, and evidence of approval by other recognized jurisdictions.

105-2G W KINDS OF TYPE EVALUATION (SECTION G)

Paragraphs 1 through 5 are edited. Paragraph 6 is reworked to describe the process to be followed for the development and approval of new test criteria and procedures.

105-2H W CHOICE OF TESTING LABORATORY

Former Section H.3. "Choice of Testing Laboratory" is deleted. The material is transferred to new Sections E.3. and E.4. (See Reference Key Item 105-2E.)

105-3 REDUNDANT TESTING

Some states conduct extensive testing of devices previously evaluated under NTEP and for which Certificates of Conformance have been issued. This testing adds additional cost for the states and the industry. The Board understands that the states use the tests as a means to familiarize their officials with the features of the new devices. It was suggested that video tapes could be developed to provide the training needed. The Executive Committee will explore this subject further.

105-4 NTEP LOGO - PROMOTION OF USE

Plans were discussed for promoting the use of the NTEP Logo. The Executive Committee encourages the use of the logo on approved main elements as well as on assembled devices.

105-5 INDEX OF DEVICE EVALUATIONS

Plans were discussed for updating and distributing changes and additions to NCWM Publication #5, "National Type Evaluation Program - Index of Device Evaluations". Copies in the 8-1/2" by 11" format will be sent routinely to State Directors and on request to others.

105-6 ADOPTION OF THE UNIFORM REGULATION FOR NATIONAL
TYPE EVALUATION

Based on the records of the NCWM office, eighteen (18) states and one (1) city are officially recognizing and using the NTEP. They are:

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

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

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

105-7 LABORATORY AUTHORIZATION

California, Ohio, and the Federal Grain Inspection Service are authorized as NTEP Participating Laboratories. The NBS is working with Alabama and New York toward authorization.

Executive Committee

105-8 NTEP BROCHURE

The work on the "NTEP Brochure" was suspended pending the outcome of the Interim Meeting in January 1987, at which time, significant changes will be considered in the testing procedures to be followed by the NTEP.

105-9 LOAD CELL INTERCOMPARISON

The status of the load cell intercomparison was explained by Mr. David Edgerly, NBS, who described the potential relationships between the intercomparison and NTEP. It is possible that the success of the intercomparison will provide opportunities for support of the NTEP. Testing check lists and protocols will have been used and testing equipment and skills refined.

About sixty percent (60 %) of the tests have been completed and it is expected that the intercomparisons will be completed by the end of the calendar year.

G. Mattimoe, Hawaii, Chairman

F. Nagele, Michigan, Chairman-Elect

S. Hindsman, Past Chairman

J. Bartfai, New York

C. Forester, Texas

J. Lyles, Virginia

J. O'Connor, Iowa

J. Swanson, Alaska

R. Walker, Indiana

C. Gardner, Suffolk County, NY, Treasurer

A. Tholen, NBS, Executive Secretary

EXECUTIVE COMMITTEE

Appendix A - Operating Budget

Appendix B - Task Force on Commodity Requirements Report

Appendix C - Memorandum of Understanding

Appendix D - Task Force on Information Systems Report

Appendix E - NTEP Policy and Procedures

APPENDIX A
OPERATING BUDGET
(July 1, 1986 through June 30, 1987)

I N C O M E

ACCOUNT NO.	NAME	AMOUNT	REMARKS
1.1	Registration Fees	\$34,000	340 at \$100= \$34,000
1.2	Membership Fees	\$45,500	1300 at \$35= \$45,500
1.3	Training Modules	\$8,000	Estimate based on sales as follows:
	Module No.	Inspectors Manuals	Sales Instructors Manuals
	2	50 at \$20 = \$1,000	10 at \$25 = \$250
	5	ditto \$1,000	ditto \$250
	8	ditto \$1,000	ditto \$250
	10	100 at \$20= \$2,000	ditto \$250
	23	100 at \$15= \$1,500	ditto \$250
	27	10 at \$15 = \$ 150	5 at \$20 = \$100
		<u>\$6,650</u>	<u>\$1,350= \$8000</u>
1.4	Interest	\$1,600	Assumed average balance of \$20,000 at 8 % interest.
1.5	Promotional	All promotional items stocked will have been sold in the previous fiscal year. Neither income nor expense are in this proposed budget pending discussion at the Jan. 1986 Interim meeting of the Executive Committee.	
1.6	Special Events	\$6,000	
	Special events are the non-meeting activities such as tours, lunches, dinners, etc. planned for the guests and members. Fees are established for each event with the intention that they are self funding. The income account is the estimated fees for these events. Account 10.0 is the estimated expense of these events.		

Total Budgeted Income \$95,100

Executive Committee

DISBURSEMENTS

ACCOUNT NO.	NAME	AMOUNT	REMARKS
2.0	Annual Meeting	\$12,000	Receptions, refreshments, guest, printing, audio-visual, treasurer expenses.
3.0	Interim Meeting	5,100	ditto. Much of the support services for the interim meeting are provided by the NBS. Contractor \$1,500.

4.0	Committee Operations	24,500	
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Expenses consist mainly of committee members' air and surface travel, room, and meal costs. Air constitutes approximately 1/3rd and meals, room, and incidentals 2/3rds of total. Of the total, \$20,000 is incurred for the Interim Meeting. Breakdown by committee is:

Executive ¹	6,000	Laws & Regs. ¹	3,000
Liaison ¹	3,000	Specs. & Tols. ¹	3,000
Education ²	7,500	Nominating ¹	2,000

NOTES:

¹ Interim Meeting

² Includes \$3,000 for Interim Meeting and \$6,000 for 3 special committee meetings required for review of training modules.

5.0	Special Programs	\$20,500	
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Expenses consist mainly of committee members' air and surface travel, room, and meal costs associated with special meetings.

Subcommittee on Commodity Standards	1,500 ³
Task Force on Commodity Requirements	3,500 ⁴
Technical Committee on NTEP	7,000 ⁵
Task Force on Information Systems	1,500 ³
OIML	3,500 ⁶
Board of Governors, NTEP	3,500 ⁷

NOTES:

³ One independent meeting (Other than during the week of another NCWM Meeting).

⁴ Three independent meetings.

⁵ Four independent meetings; two each for weighing and measuring groups.

- 6 Participate in one domestic meeting and two international meetings; the \$3,500 budgeted item represented 50 % of the total cost since cost is shared with the NBS. The NCWM adopted a policy approving a budget of up to \$7,000 per year in support of OIML.
- 7 Two independent meetings. Anticipates requirement to meet to resolve policy issues resulting from new technology or regulatory aspects of device evaluation.

6.0	Chairman/Chairman-Elect	\$7,500	Provides for attendance at the four Regional Association Annual Meetings and one special meeting other than those included in Accounts 4.0 and 5.0.
7.0	Membership Program	\$6,000	Includes costs associated with purchase, printing (certificate, mailer, etc.) and part time administrative assistance of \$2,500.
8.0	Printing & Publications	\$3,000	Miscellaneous forms, mailings, decals, stationary, and part time administrative assistance of \$1,500.
9.0	Administration	\$7,000	Equipment maintenance and amortization; part time administrative support of \$4,500; post office box; etc.
10.0	Special Events	\$6,000	Income (see Income Account 1.6) will be planned to cover costs incurred.
11.0	Promotional Items (see Income Account 1.5)		
12.0	Training Modules	\$3,500	Cost of printing copies to satisfy demand. (see Income Item 1.3)
Total Budgeted Costs		\$95,100	

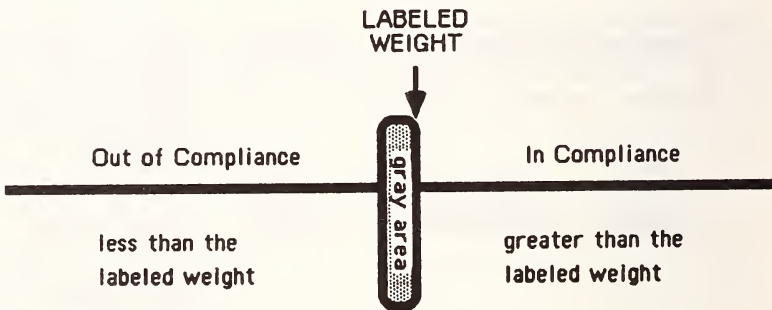
APPENDIX B

REPORT OF THE
TASK FORCE ON COMMODITY REQUIREMENTS
TO THE
EXECUTIVE COMMITTEE
NATIONAL CONFERENCE ON WEIGHTS AND MEASURES

R.L. Thompson, Chairman
Chief of Weights and Measures
State of Maryland

Executive Summary

The Task Force on Commodity Requirements proposes "Compliance Test Procedures for Products Subject to Moisture Loss". The model upon which the procedures are based is as follows:



- o When the average net weight for a lot being inspected is equal to or greater than the labeled weight, the inspected lot complies with the net weight requirements.
- o When the average net weight is less than the labeled weight and falls in the "out of compliance" area, no further information is needed to determine whether the inspected lot complies. The lot does not comply with the net weight requirements.
- o When the average net weight is less than the labeled weight, but falls in the "gray area", further information must be gathered in order to make a final decision on whether the lot complies.

For flour, the Task Force proposes that the width of the gray area be 3% of the labeled weight. Package lots averaging less than 97% of the labeled weight would automatically fail to comply. Further information would be needed to decide on package lots whose average net weights ranged from 97% of the labeled weight up to (but less than) the labeled weight.

This is the chief distinction between a "gray area" concept and a tolerance. If there were a tolerance of 3%, for example, package lots averaging greater than 97% of the labeled weight would automatically comply. A

"gray area" of 3%, however, will require additional information before compliance or noncompliance can be determined. It is expected that some lots in the gray area will fail to comply based on additional information; other lots will pass.

For meat and poultry, using dry tare test methods, the Task Force proposes **NO gray area**. Whenever the average net weight of an inspected lot is less than the labeled weight, the lot is out of compliance.

For poultry from Federally-inspected plants when wet tare test methods are followed, the Task Force proposes a 2% gray area after 24 hours from the pack date, with an additional 1/2% per day up to a maximum of 6%.

The Task Force is not yet prepared to propose what the width of the gray area should be for meat from Federally-inspected plants when wet tare test methods are followed. Additional data will be collected as part of the pilot study to delineate the gray area.

In addition, the Task Force has developed with USDA a Memorandum of Understanding (Appendix C) that provides a formal agreement specifying what each party will do in the investigation of suspected short weight of packages of meat and poultry from Federally inspected plants.

The Task Force requests the Executive Committee to:

- (1) endorse the concept upon which the compliance test procedures are based;
- (2) sponsor a pilot study in the coming calendar year to evaluate the feasibility of the procedures for weights and measures enforcement programs.

The Task Force has developed a detailed protocol to follow in the pilot study for the investigation of short weight for flour and for meat and poultry from Federally inspected plants.

Progress Report

On August 2, 1984, at the 69th Annual Meeting, Chairman Ezio Delfino appointed the Task Force on Commodity Requirements to address the issue of moisture loss for flour, meat, and poultry. He appointed representatives from each of the four regional weights and measures associations, representatives from three trade associations representing the flour, meat, and poultry packaging industries, a consumer advocate, and representatives from the U.S. Department of Agriculture (meat and poultry), the U.S. Food and Drug Administration (flour), and the National Bureau of Standards. (The present membership is listed at the end of this report.)

In his initial charge to the Task Force, Mr. Delfino asked that the Task Force apply three criteria to its work. Any approach had to:

- o allow consumers of these products to make value comparisons;
- o allow fair market competition; and
- o be verifiable and enforceable.

At its first meeting, the Task Force added two more criteria:

- o The approach should be fair to all retailers, large and small.
- o The approach should be applicable to other products subject to moisture loss.

The Task Force held its first meeting on November 28, 1984. Four more meetings were held in 1985 (January 17-18, June 11-13, September 25-27, and December 2-4). The eleven task force members have spent approximately 1500 hours in preparation, study, discussion, and negotiations on the issue. At least triple that amount of time has been contributed by other weights and measures agency personnel, USDA, and business representatives. Nothing achieved so far could have been accomplished without the wholehearted support of the entire weights and measures community involved in this work including Federal, state, and local regulatory agencies and regulated businesses. The Task Force wishes to thank everyone who has assisted it so unstintingly.

The Task Force is aware that the policy of weights and measures officials is to require "net weight at retail"; most of the consuming public probably believes that every package contains at least the amount of product that is printed on the label. However, Federal and state laws and regulations permit variations both above and below the label. In the Task Force report printed in last year's NCWM Announcement Book and in the Report of the 70th National Conference on Weights and Measures 1985 (pages 59-70), the Task Force observed that there did not appear to be a large enough consumer outcry or constituency for the Task Force to propose a change to existing Federal or state regulations that permit variations in package net weights due to loss of moisture "during good distribution practices". This has meant that the Task Force has focused its attention on the design of test methods that would incorporate "reasonable variations for moisture loss" as part of the weights and measures inspector's day-to-day protocol. The Task Force announced its plan to formulate "Compliance Test Procedures for Products Subject to Moisture Loss". These procedures will assist an inspector to efficiently determine, no matter where in the field he or she is testing, whether packages subject to moisture loss comply with the laws and

regulations. Following these procedures will occasionally require more than a normal net weight test. The Task Force believes, however, that following these procedures will lead to a clear distinction between compliant and noncompliant product--a conclusion not often achieved by existing weights and measures field net weight tests of product subject to moisture loss. The Task Force is unanimously opposed to developing a tolerance to be applied to packaged products that lose moisture. Such an approach could mask poor manufacturing and distribution practices, and enable unscrupulous packagers to put up packages with less than the labeled weight.

Today, an inspector who finds poultry from a Federally-inspected plant or packages of flour short weight is faced with the problem that any shortage found could be claimed to be due to moisture loss. In effect, a "gray area" could be said to cover the entire situation whenever short weight of any magnitude is found (Figure 1).

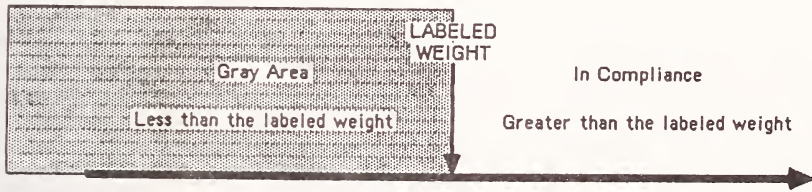


Figure 1

In contrast, the Task Force proposes a model to make the probable area of uncertainty, called the "gray area", as small as possible, yet realistic (Figure 2).

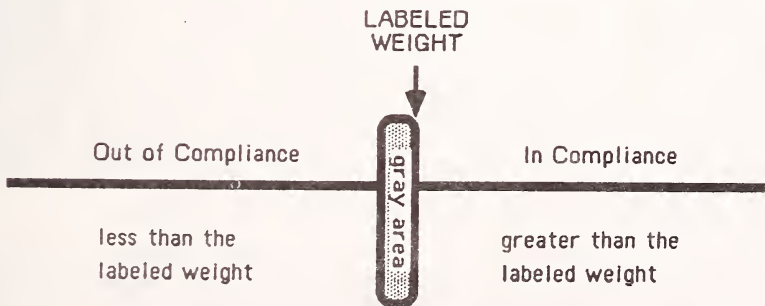


Figure 2

The width of the gray area and the additional information that may be needed in order to determine whether packages are in compliance have been the subject of the last four meetings of the Task Force.

Executive Committee

Two physically different situations exist: flour; and meat and poultry.

- o **Moisture in flour** packaged in paper bags is lost into the atmosphere. It evaporates into the air.
- o **Moisture in meat and poultry**, although some small amount is lost by evaporation, is principally lost by weepage into the packaging materials or as free-flowing liquid.

Although the proposed compliance testing model looks similar for both types of moisture loss, the Task Force has found it helpful to separate its work into these two categories.

Flour

See list of references at the end of this report. All referenced material can be obtained upon request.

The Task Force analyzed data from several sources that indicate that a weight loss (due to moisture loss) as large as 6% could be experienced by consumer sizes of packaged flour in northern states during winter months. Figure 3 shows a computer-generated model, developed from an actual moisture loss study conducted by the Food and Drug Administration (FDA), that shows a "worst case" example of flour packed at 14% moisture content drying to almost 8% in moisture content. (A moisture loss of 1% translates directly into a weight loss of 1%.) There is some indication that it might take as much as 6 months from the time of pack to lose that much moisture. Other information shows that, following normal distribution channels, flour on retail shelves could easily be from one week to 8 months old.

The Task Force requested weights and measures agencies to collect data on flour at retail, wholesale, and packaging plant locations. Sixteen states and 7 counties (from as far north as Connecticut and Wisconsin) participated in that data collection, mainly in the months from February through May. The Task Force requested that all testing follow NBS Handbook 133, Category B sampling procedures, and that the participants report average package errors (deviations from the package labeled net weight), lot code information, location of test, and a laboratory determination of the moisture content. The date of packaging and moisture content at the time of packaging were obtained by weights and measures officials and the Millers' National Federation. This information determined the age of the flour and the amount of moisture lost between the time of pack and the time of test.

Data on a total of 1359 lots were collected between December 1984 and August 1985. Moisture content at the time of test was available for about 550 of these lots. The maximum moisture loss observed in this set of data was 3.9%. For those brands for which moisture content values at the time of test and at the time of pack were both available, it was determined that the flour packages were overfilled (above the labeled quantity) by about 3% at the time of pack. The Task Force had hoped that trends that field inspectors could use in enforcement would be evident in the data. For example, knowing the age of the flour might have provided guidance in predicting probable moisture loss, or knowing the average package error

might have provided information to predict moisture loss. The surest method of determining moisture loss is, however, to measure the moisture content at the time of test and subtract that moisture content from the moisture content at the time of pack. For example, if the moisture content at time of test is 11%, and the moisture content at time of pack is 13.5%, the moisture loss is 2.5%. The moisture content of the flour at the time of pack could be fairly well assessed by brand from the Task Force data.

Although trends could be observed in the Task Force data, they were not substantial enough to be useful in any enforcement activity. Analysis of the data showed no correlation between the moisture content and the average package error, some correlation between moisture loss and the average package errors, only very weak correlation between the age of the flour (as measured from the time of pack to the date of the net weight test) and average package error, some correlation between the age of the flour and the amount of moisture lost (but not enough correlation to use the data to predict), and weak correlation between the amount of moisture lost and the moisture content at the time of test. Relationships between package error, moisture content, moisture loss, and age of the flour were also explored for individual brands of flour, the time of the year in which the data were collected, and the geographical location in which the tests were made. Despite the large amount of data collected and analyzed, precise correlations or conclusions could not be drawn. (Data and graphs available on request.)

What the Task Force did find useful for field inspection is the overall analysis of package lot test results in terms of the size of the average package errors as a percentage of the labeled weight. This is presented in Table 1 and in Figure 4.

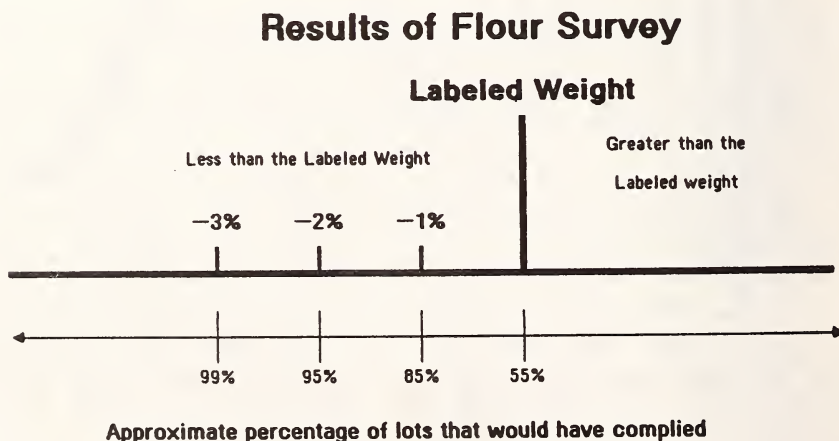


Figure 4

Table 1

Result of Flour Survey

Total number of lots	Percentage of those lots with minus average errors	Percentage of		Percentage of those lots more than 3% short
		those lots more than 1% short	those lots more than 2% short	
710	45%	15%	4.4%	0.5%
Retail 543	55%	20%	5.7%	0.7%
Whsale 75	12%	2.7%	0	0
Packer 92	11%	0	0	0

Executive Committee

Even though a moisture loss of as much as 6% appears to be possible (and a variation of 4% was put forth by FDA in a 1980 Federal Register proposal and supported by the milling industry), the Task Force wants to maintain the status-quo of about 3% in overpack. Therefore, the Task Force has concluded that the maximum width of the gray area should be no more than 3% for flour.

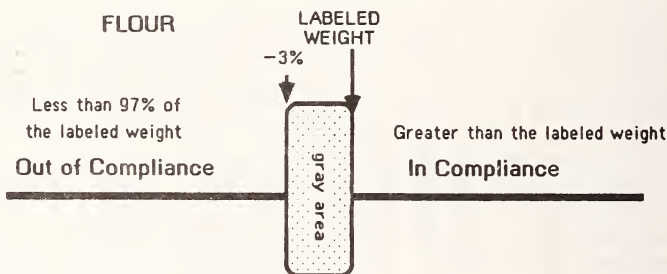


Figure 5

How to interpret and use the "gray area" concept will now be discussed.

The Gray Area for Flour

For 2-lb packages of flour, a 3% gray area represents 0.06 lb; for 5-lb packages, the gray area is 0.15 lb. An outline of the proposed test protocol is as follows. (The specific test protocol to be followed in the pilot study will be developed in detail at the next Task Force meeting.)

A weights and measures official might test flour at a retail, wholesale, or packaging plant establishment. It is assumed that he will ordinarily take a sample of the packages available for inspection, and test the net contents using Handbook 133, Category B procedures. If the official finds the average net weight of the flour equal to or more than the labeled net weight (and no individual packages short weight by more than the MAV), the lot will be reported as complying with the net contents regulations. If the official finds, for example, the average net weight of 2-lb packages to be less than 1.94 lb, the lot will be reported as out of compliance with the regulations. Whatever legal remedy is ordinary will be pursued. If the official finds, for example, the average net weight of 2-lb packages to be between 1.94 and less than 2 lb, one or more of the steps below may be followed:

- o The inspector may determine from the lot code when the flour was packaged. (The inspector will use information that explains what part of the lot codes of different flour manufacturers gives the pack date. This information is to be supplied by the Task Force in cooperation with the Millers' National Federation.) Some jurisdictions may choose to consult Figure 3 and directly compare the weight loss observed for the flour under test with this worst case example. For example, if the inspector finds the flour less than one month old and 2% short weight (1.96 lb), it is not likely, looking at all the possibilities in Figure 3, that the flour could have dried out that much in so short a time. In this case, the jurisdiction would be warranted to take appropriate action against short weight product.

- o The inspector may put a hold order on the lot inspected and obtain a sample of the flour, returning it to the state laboratory for a moisture content analysis. The Task Force will supply the average moisture content at time of pack for various styles and kinds of flour. For example, ordinary white flour is normally packaged at 13.5% to 14% in moisture content. As was mentioned earlier, any shortage in net weight translates directly into possible moisture loss. If flour is packed at 14% and at that time weighs 2 lb, the flour will weigh 1.98 lb (-1%) if it dries to 13% in moisture content. If, for example, the flour tested is 3% short weight, and the laboratory finds the moisture content to be 12.5%, at most 1.5% of the short weight can be attributed to moisture loss; the remaining short weight must be due to insufficient product having been put into the package at the packaging plant. A fixed figure will be supplied by the Task Force, in cooperation with the Millers' National Federation, to be used by the enforcement agency to calculate back to the weight at time of packaging. Alternatively, the enforcement agency may use the company contact names to be supplied by the Millers' National Federation to the Task Force to obtain the moisture content at the time of pack for any particular lot code.
- o The jurisdiction may choose to inspect at the plant. (No variations due to loss of moisture are applied to in-plant product because distribution has not begun.) Only about 100 plants package "family flour"; therefore, in-plant inspection is not unreasonable. Inspection at the plant allows an inspector to consider the appropriateness of the quantity control program and the weighing equipment in use at that establishment.

The Task Force must stress that the 3% gray area is not a tolerance. If 3% were a tolerance, any package lot would automatically comply even if the average weight were short by as much as 3%. The "gray area" is that area in which further information is needed to make a decision as to whether the packages under test are really in compliance or are not. As examples of other information, if the inspector is testing at a wholesale or warehouse location, or follows up retail testing at these locations, it is evident from Table 1 that very rarely would any variations due to moisture loss larger than 1% be necessary. In addition, Table 1 indicates that shortages of 0 to 1% are likely for about 30% of all lots that a jurisdiction would test; shortages of 1 to 2% can be expected in only about 10% of all lots; and shortages of 2 to 3% in perhaps less than 5% of all lots. This additional information can be used by a jurisdiction in deciding how much extra effort to expend to determine whether any given lot complies with net content requirements.

Meat and Poultry

Although a very small amount of moisture is lost by evaporation into the air (except for air-dried sausages, for example), most of the moisture lost by meat and poultry occurs as free-flowing liquid or is absorbed by the packaging materials.

All members of the Task Force agree that if dry tare is used to determine whether packages of meat or poultry comply with net weight requirements, no gray area would be involved. (See Figure 6.) Any inspected lot of packages whose average net weight is found to be less than the labeled weight using dry tare (or by drying out wet tare materials) would automatically be out of compliance.

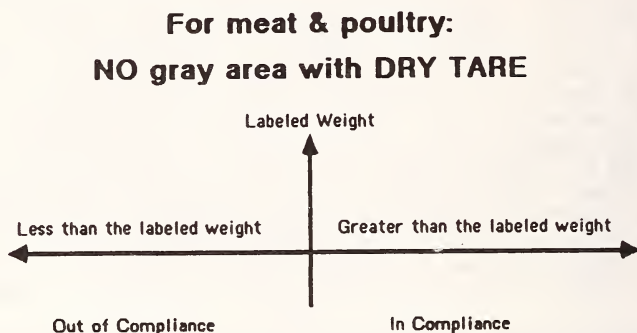


Figure 6

The U.S. Department of Agriculture (USDA) has jurisdiction over meat and poultry put up in Federally-inspected plants. USDA has agreed with the Task Force that there should be no gray area using dry tare and Category A sampling plans from NBS Handbook 133 when testing product from USDA-inspected plants. (See Figure 7.) This premise is further explained and incorporated in a Memorandum of Understanding developed by USDA and the Task Force that is presented later. (See Appendix C.)

For meat & poultry from USDA plants
NO gray area with DRY TARE and Category A
sampling plans from H-133

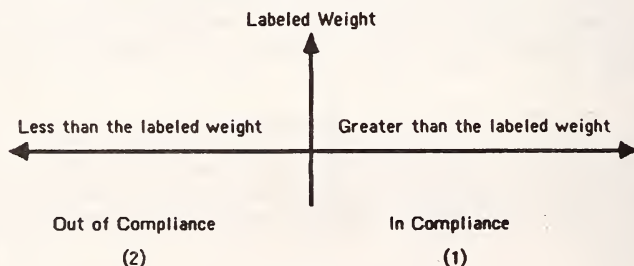


Figure 7

The Task Force agreed that dry tare is a convenient and efficient way to test packages for net weight compliance. The use of wet tare (where only the solid portion is considered net weight; free-flowing liquid is tare), however, permits a jurisdiction to investigate whether good manufacturing and good distribution practices are being followed. The Task Force, therefore, has sought to determine how large a gray area is reasonable for those jurisdictions that use wet tare tests on meat and poultry originating from Federally inspected plants. (See Figure 8.)

For meat & poultry using WET TARE

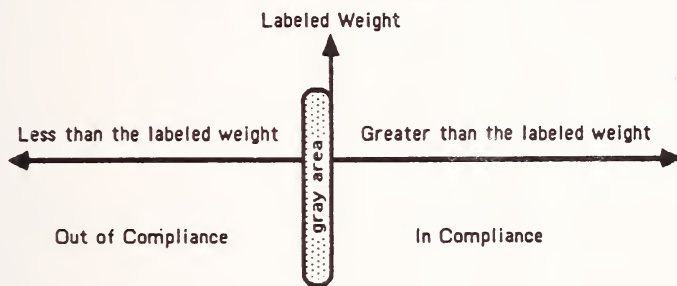


Figure 8

Wet Tare and Poultry

Data on poultry were provided to the Task Force and collected by Task Force members. A large study on poultry was separately carried out by the state of California. The California Study collected net weight, expiration date, and package error information on all types of poultry, from USDA inspected plants and store-packaged, for 2100 packages across the state. The Task Force collected data on actual moisture loss on consumer-sized packages of chicken kept under ordinary supermarket storage conditions. Additional data were collected in California and by Task Force members, tracing moisture loss through the distribution channels from a USDA inspected plant to retail. Although the results have not yet been completely analyzed, some preliminary conclusions can be drawn.

A substantial amount of moisture is lost from poultry during distribution because the poultry manufacturing process includes chilling in water. Poultry absorbs moisture during this chilling; under Federal regulations it is permitted to gain up to 8% added weight (added moisture). (See Figures 9 and 10 for two extremes from the Task Force study.) For ease of use in the field, the Task Force believes that one number defining the gray area for poultry (wet tare) should be provided to encompass all cuts and styles of poultry packages from Federally-inspected plants. From the data so far available, the Task Force believes that 2% after 24 hours from the time of pack may be a reasonable figure to define the width of the gray area, with 1/2% per day added thereafter up to a maximum of 6%, disregarding the pull or expiration date thereafter. Looking at Figure 9, 2% may not seem large enough for the beginning amount for a product such as chicken breasts. Additional data collected by Maryland and California Weights and Measures, however, indicate that 2/3 or more of the moisture lost in 24 hours actually is absorbed by the packaging material in the first hour from the time the

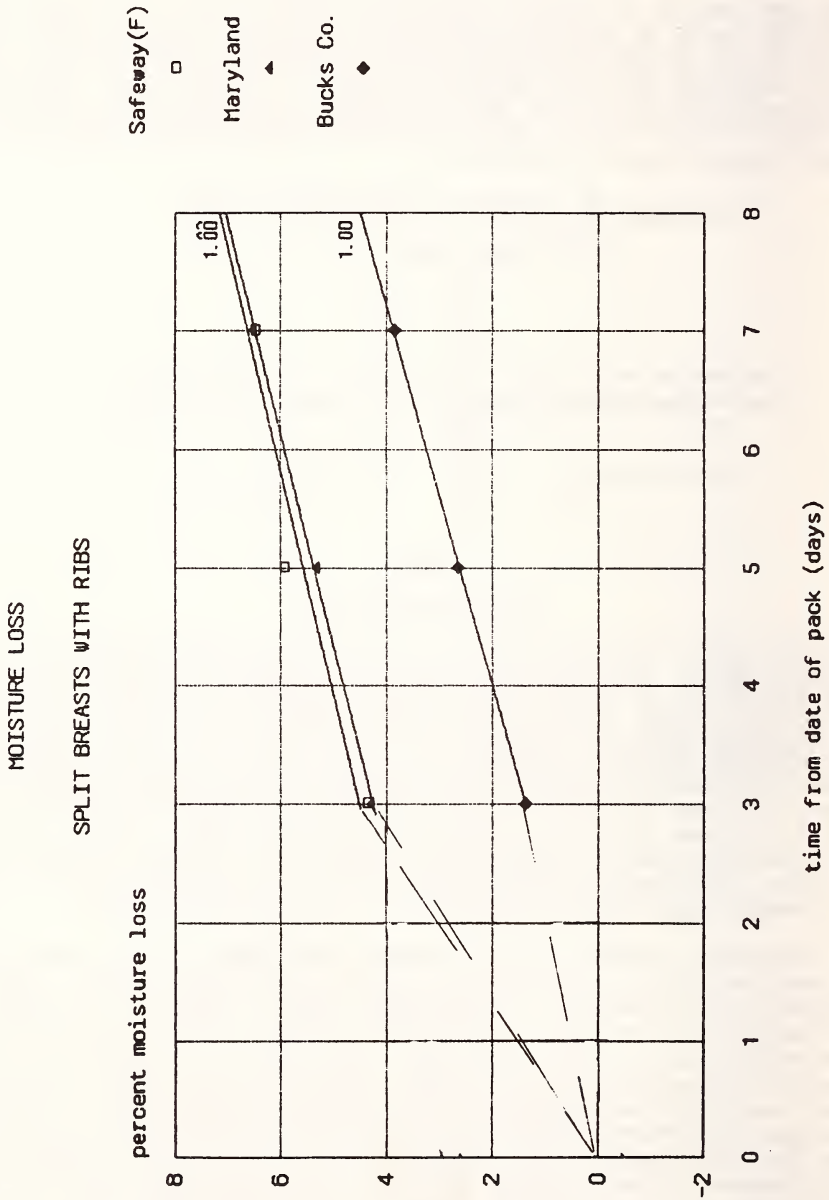


Figure 9

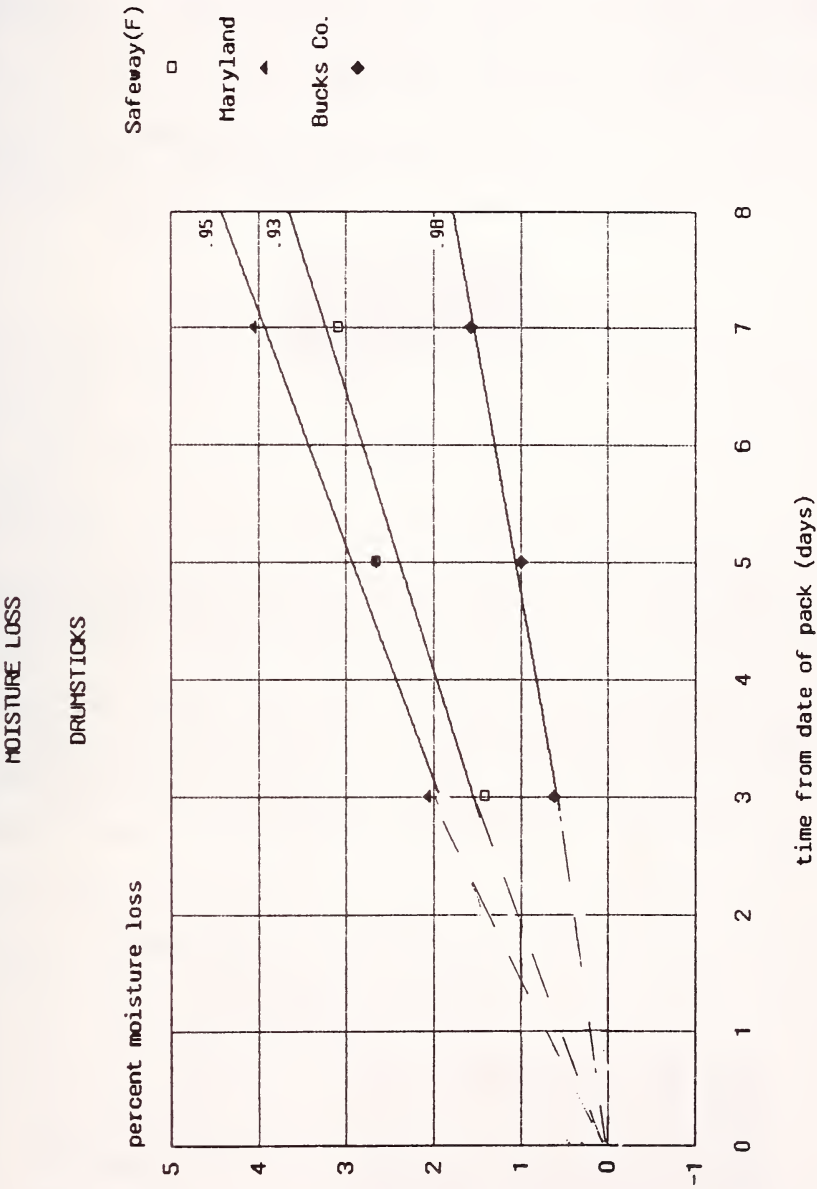
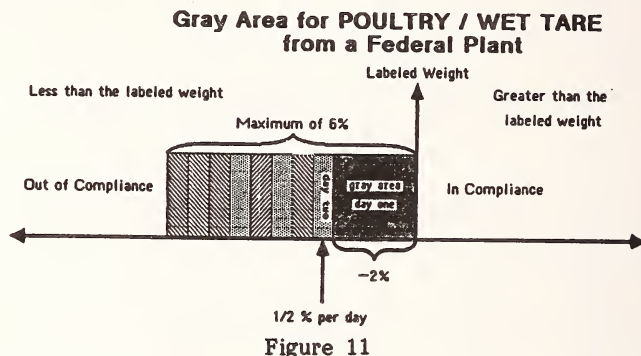


Figure 10

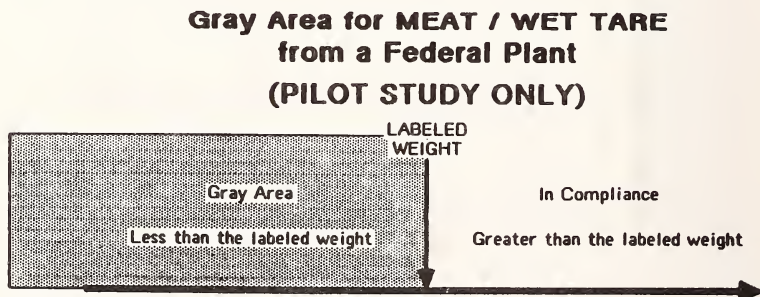
Executive Committee

poultry is placed in the package. The weights and measures members of the Task Force believe that this is part of the manufacturing process, not part of distribution. Thus, a starting figure smaller than the moisture loss in 24 hours was selected to represent "reasonable" loss during distribution. The gray area can be described as shown in Figure 11.



Wet Tare and Meat

In August 1985, weights and measures officials collected a very small amount of data on meat coming from Federally-inspected plants. The data did not indicate that a gray area was needed for any of the tested products (hot dogs, lunch meat, sausage, beef, and veal). The Task Force was subsequently provided data on some selected cuts of fresh meat kept under normal supermarket display conditions. The latter data do not represent products packaged and labeled at a Federally-inspected establishment and therefore cannot be used in arriving at a figure to represent the gray area. Therefore, data from a pilot study (if the Executive Committee agrees to sponsor one) will be used to arrive at reasonable figures for the gray area (if any are needed) for meat packaged and labeled at a Federally-inspected plant.



During the pilot study, however, all package lots of meat from Federally-inspected plants, whose averages are less than the label using wet tare tests, will have to be investigated as if they were in the gray area.

As was the case for flour, the gray area for meat from Federally-inspected plants, using wet tare tests, is not a tolerance. It is a specified shortage that alerts the testing official to seek additional information before making a final determination as to compliance or noncompliance. The Memorandum of Understanding with USDA (to be discussed later) describes the protocol that should be followed to gather some of this additional information.

The Role of the Packager

In each of the compliance testing models being developed for flour and for meat and poultry from Federally-inspected plants, the burden of proof remains on the packager as to whether the product legitimately has undergone moisture loss. It remains the packager's prerogative to code-date his products (not all do) and to release that coded information to enforcement officials. The Task Force will obtain and disseminate this information for most packagers of these products, through the assistance of the trade associations represented on the Task Force. In fact, the success of this enforcement approach may well depend on whether this information is widely available. The meat and poultry industries are also prepared to supply samples of their dry tare, updated as necessary (and/or average tare weights verifiable by Federal inspectors), to be used by those jurisdictions that use dry tare testing in their net weight checks. In addition, contact names at the plant level will be made available for follow up investigations.

It cannot be stressed enough that the gray area is an area for further study. Many packagers can profit from the advice and assistance of regulatory officials concerning appropriate weighing equipment or quality control measures to avoid short weight package lots.

Memorandum of Understanding

A Memorandum of Understanding (MOU) has been developed by USDA in concert with the Task Force (see Appendix C.) A formal agreement between USDA and a weights and measures jurisdiction, the MOU delineates the roles and responsibilities of each agency and stresses their concurrent jurisdiction over meat and poultry packaged at a Federally-inspected plant. The MOU spells out the protocol to follow and the assistance that USDA can provide when a weights and measures official wants to gather further information at the plant level. If short weight is found (either by using the dry tare/H-133 procedures in the field or by in-plant follow-ups when wet tare methods are used), USDA will not appear as a friend of the packager in any court action. The weights and measures agency will be able to rely on its concurrent jurisdiction with USDA in this area and will be able to proceed on its own without the Federal Government appearing to oppose them. Finding short weight at the time of pack is not likely, however, to result in product recall, a costly effort more suitable for safety and health problems. USDA will try to resolve the problem in the plant so that short weight is not likely to recur.

Executive Committee

As evidence of USDA's strong desire to cooperate, the MOU has written into it:

- o that weights and measures officials will be consulted regarding the weighing equipment,
- o that records of the servicing of the weighing equipment will be maintained, and
- o that tare information will be verified by USDA to the extent necessary so that weights and measures officials may have some confidence in the printed tare weights supplied on bulk shipments of packaged poultry and some meats.

The MOU points out that data concerning a particular lot code may only rarely be available to USDA. However, the trade association representatives on the Task Force maintain that the plant quality control records will be made available to weights and measures officials by all their members on a request basis.

The MOU is perceived as a good mechanism to achieve reciprocity between weights and measures jurisdictions in the area of net weight control. A jurisdiction can be confident that if it must call upon another agency in a neighboring state to do in-plant investigations, the same test methods will be used.

Further Work

The Task Force believes it necessary to conduct a pilot study to determine whether the concept of a gray area is feasible as part of weights and measures enforcement programs. If the Executive Committee agrees with this recommendation, the Task Force will flesh out the standard operating procedures to be followed during a pilot study in compliance testing flour, or meat and poultry from Federally-inspected plants. As a result of the data to be collected in the pilot study, the Task Force must arrive at final values to define the gray area for wet tare tests of meat packed at Federally-inspected plants.

The weights and measures representatives on the Task Force also wish to pursue the issue of moisture loss for bulk ice-packed poultry sent to retailers for repackaging into consumer-sized packages.

Some major questions have yet to be answered:

- o How will any approach taken with meat, poultry, or flour affect other packaged goods that may lose moisture?
 - The Task Force believes that the burden of proof will have to remain on the packager or trade association to provide data and information supporting any request for a definition of the gray area.

- o How will any approach for packages produced in a USDA inspected plant affect store-packed meat and poultry?
 - The level of compliance remains as high in jurisdictions using wet tare as in jurisdictions using dry tare.
 - How has dry tare from Federally inspected plants affected the competitiveness of retailers required to deliver net weight on a wet tare basis?
 - The weights and measures members of the Task Force believe that it is reasonable to expect full net weight while product is under the control of the packager. Therefore, store-packed meat and poultry is expected to be full net weight, as is product when checked at any packaging plant.
- o Exactly when does "distribution" begin?
 - Some Task Force members claim distribution starts when the product goes into the package. What about product that is retained for some period of time before the label goes on?
 - Some Task Force members claim distribution starts when the label goes onto the package. What about product that is retained under the control of the packager for some period before being shipped?
 - Weights and measures Task Force members claim that distribution starts when the product leaves the packaging plant. What about product warehoused by the packager, as compared with product transferred to a retailer and warehoused under the same conditions for the same period of time?
- o How much effort will be required to put the "gray area" approach into effect in the weights and measures enforcement community?
 - The Task Force believes that this approach will lead to enforcement officials testing flour, meat, and poultry packages that they have previously avoided because of the ambiguities in dealing with short weight found at retail.

Pilot Study

The Task Force proposes to answer this last question by conducting a pilot study. The pilot study will require greater effort on the part of participating jurisdictions than is envisioned under routine enforcement procedures to be eventually designed:

- The pilot study will collect basic data on meat and meat products from Federally-inspected plants.
- A program to verify tare data cannot be established "overnight" at all Federally-inspected plants.

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- The question of which of three different types of "dry tare" is optimum will be investigated in the pilot study: actual samples of dry tare, dry tare data from the plant, or reconstructed (cleaned and dried) dry tare.
- The pilot study will collect additional moisture content information on flour that may only infrequently be collected during routine inspection.
- Lot code information (knowing the date of pack) is key to making the gray area concept workable. Some of this information will be collected and distributed at the same time that the pilot study is conducted. This may result in more work on the part of pilot study participants to get this information in a timely manner for compliance or enforcement actions.

The Task Force will seek volunteer jurisdictions to follow the protocols to be provided and report back to the Task Force and the Executive Committee their successes and problems in net weight package control for flour and meat and poultry from Federally inspected plants. The Task Force members believe that they can complete development of these protocols by the Annual Meeting (July 1986) and begin the pilot study in the fall. An interim report should be available by the Interim Meetings of 1987.

Recommendations to the Executive Committee

The Task Force requests that the Executive Committee endorse the concept of the "Compliance Test Procedures for Products Subject to Moisture Loss" being developed. Furthermore, the Task Force requests that the Executive Committee establish the pilot project to validate the feasibility of the concept in actual weights and measures enforcement activities.

TASK FORCE ON COMMODITY REQUIREMENTS

Mr. Richard L. Thompson, Chairman
Chief of Weights and Measures
Maryland Department of Agriculture

Ms. Peggy Adams
Chief Sealer/Director
Bucks Co. Department of Consumer Protection
representing the consumers' interests

Dr. Mahlon A. Burnette
Public Affairs Consultant
representing American Meat Institute

Mr. Kenneth Butcher
Maryland Weights and Measures
representing Southern W&M Association

Mr. Paul B. Engler
Director, Los Angeles Weights and Measures
representing Western W&M Association

Dr. Edward Heffron
Chief, Food Division
Michigan Department of Agriculture
representing Northwestern (Central) W&M Association

Mr. Tom Klevay
Vice President
Millers' National Federation

Mr. John McCutcheon
Asst. Deputy for Meat and Poultry Inspection Service
U.S. Department of Agriculture

Mr. Allan Nelson
Chief, Weights and Measures
Connecticut Department of Consumer Protection
representing Northeastern W&M Association

Mr. Howard Pippin
Director, Division of Regulatory Guidance
Bureau of Foods, U.S. Food and Drug Administration

Mr. Stephen Pretanik
National Broiler Council
representing the poultry industry

Dr. Carroll Brickenkamp
National Bureau of Standards

Executive Committee

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Flour

C.A. Anker et.al., "A Study of the Net Weight Changes and Moisture Content of Wheat Flour at Various Relative Humidities", Cereal Chemistry, Vol. XIX, No. 1, January 1942

J.C. Warren, Division of Food Technology, FDA, "Quantity of Contents Compendium: Storage Study on Flour, Mixes and Cereals"

R.D. Benson, "Prediction of Moisture Loss in Bagged Flour", 10 June 1985

Task Force on Commodity Requirements, "Flour Survey Progress Report, December 2, 1985"

"First Report on the Task Force on Commodity Requirements", provided by the state of California, November 25, 1985

Meat and Poultry

"Initial Report to CAWMO Subcommittee Regarding Net Weight Errors on Fresh Poultry Packages in California", updated November 25, 1985

D. Blackshear, Testimony to U.S. Department of Agriculture on 1977 net weight proposal

K. May, "Weight Loss of 'Dry' Packed and Chill Packed Chicken"

R. Hixon, Moisture loss data on poultry and fresh meats stored under normal supermarket conditions, Safeway

Task Force on Commodity Requirements, Preliminary Report on Moisture Loss from Poultry and Fresh Meat, December, 1985.

Task Force on Commodity Requirements, Report on Moisture Loss from Poultry from a Federally Inspected Plant, March, 1986.

APPENDIX C

MODEL AGREEMENT BETWEEN A STATE OR LOCAL GOVERNMENT AND
FOOD SAFETY AND INSPECTION SERVICE,
U.S. DEPARTMENT OF AGRICULTURE

for the determination of net contents of
federally inspected meat and poultry products

MEMORANDUM OF UNDERSTANDING

Between the

FOOD SAFETY AND INSPECTION SERVICE

And the

STATE OF _____

Or

LOCAL GOVERNMENT OF _____

The Food Safety and Inspection Service and the State or Local Government of _____ hereby jointly agree to the following terms and conditions with respect to the enforcement of certain provisions of the Federal Meat Inspection Act and the Poultry Products Inspection Act and State and local laws regulating net content labeling of meat and poultry products.

I. PURPOSE

To permit full implementation of concurrent jurisdiction, as provided by law, by the Food Safety and Inspection Service (FSIS) and State and local weights and measures agencies engaged in regulatory functions concerning the declared net content of federally inspected meat and poultry products. To maximize the exchange of net content information between FSIS and State and local agencies for the determination of label accuracy on federally inspected meat and poultry products. To encourage the use of quality control programs by establishments operating under Federal inspection, and to encourage the use of quality control documentation by State and local agencies in their regulatory programs.

II. STATUTES RELATING TO THE AGREEMENT

Nothing in this agreement shall lessen the responsibilities of the Food Safety and Inspection Service under the Federal Meat Inspection Act or the Poultry Products Inspection Act, nor of the State and local agencies operating under their respective statutes.

- A. The Food Safety and Inspection Service of the U.S. Department of Agriculture is primarily responsible for enforcing the Federal Meat Inspection Act and the Poultry Products Inspection Act. In carrying out its responsibilities, the Food Safety and Inspection Service has inspectors stationed full time in large meat and poultry establishments while one inspector on patrol assignment will be responsible for daily visits to several smaller establishments. In addition, FSIS has compliance personnel that conduct activities primarily outside of the establishment. The sections of the Code of Federal Regulations that concern net content compliance are 9 CFR 317.2(h)(2) for meat and 9 CFR 381.121(c)(6) for poultry. FSIS net content inspection is accomplished by the FSIS inspector in the establishment through observing the establishment's process control and by verifying the product's net contents by selecting and measuring samples from lots of labeled product. Federally approved quality control programs are establishment operated control procedures for tare determination, sample selection, sample measuring, recordkeeping, taking action when a production process goes out of control, and taking action against noncomplying product. The FSIS inspector monitors the application of the quality control program, evaluates records, and conducts verification sampling and measuring to determine continued Federal acceptance of the establishment's quality control program and the accuracy of its net content labeling on the establishment's product.
- B. State and local agencies have concurrent jurisdiction to enforce the provisions of the Federal Meat Inspection Act and the Poultry Products Inspection Act regarding net content labeling of federally inspected meat and poultry products within their geographic area, that are outside federally inspected establishments. Also, State and local agencies may impose on such establishments recordkeeping, access, and other requirements within the scope of section 202 of the Federal Meat Inspection Act and section 11(b) of the Poultry Products Inspection Act. (See 21 U.S.C. 467 et. seq. and 678). The State and local agencies conduct unannounced evaluations at sites other than at federally inspected establishments, of declared net contents on all products including federally inspected meat and poultry products. The actions available to the State and local agencies vary depending upon their respective laws. However, typically, State and local agencies may take one or more of the following actions whenever noncompliant products are found: (1) Require noncompliant products to be removed from the market; (2) Relabel to the correct content; (3) Prepare documentation of findings and give

it to the owner and/or producer of the product; (4) Contact FSIS if it is federally inspected product; and (5) Pursue regulatory action through the administrative or judicial system. (Cite appropriate State and or local law(s) or regulations if desired).

III. SUBSTANCE OF AGREEMENT:

A. The Food Safety and Inspection Service will:

1. Instruct all its processed food inspectors in the procedures that will be used when cooperating with the State or local officials who are reviewing the records or control procedures, and in assisting State or local officials in identifying the establishment personnel responsible for reviewing establishment-maintained records within the framework of this Memorandum of Understanding.
2. Inform the State and local officials who are reviewing the records of the procedures if the establishment is operating under a federally approved Total or Partial Quality Control Program.
3. Assist State and local officials by making its records of the evaluation of tare weights and net contents of meat and poultry products at any federally inspected establishment available to State and local officials for those lots that they identify as well as any scale records. With respect to any establishment operating under a federally approved Quality Control Program, such records will include: the date of the evaluation, the product evaluated, the code markings if any, the label used, the individual product contents in the sample, the range of measurements, the sample average, scale records, and the inspector's signature.
4. Maintain a system for evaluating the verifying tare weights and will make its records available to State and local officials.
5. Be responsible for monitoring the accuracy and suitability of scales in federally inspected establishments used to establish the net content of federally inspected meat and poultry products. FSIS will require the scales to be maintained in accordance with the requirements set forth in the current edition of the National Bureau of Standards Handbook 44.
6. Maintain its role as exclusive authority for net content of packages at federally inspected establishments while cooperating with the State and local authorities.

Executive Committee

7. Review the records and its decisions in the event of a disagreement by State and local officials over net contents of federally inspected meat and poultry products. The FSIS personnel to settle such disagreements will be the Regional Director of the region in which the federally inspected establishment is located. The Inspector-in-charge at the plant will be responsible for arranging an appeal to the Regional Director. In the event agreement is not reached in the regional meeting, the disagreement can be appealed to the Administrator, FSIS.
8. Define specific sampling procedures for determining the compliance of a lot of meat or poultry products; at sites other than official meat and poultry establishments. These are defined as Category A Sampling Procedures in the National Bureau of Standards Handbook 133, Second Edition.
9. Agree to support the action of the State or local official if the actions are in agreement with the procedures in this Memorandum of Understanding, including the procedure in Annex A.

B States and local agencies will:

1. Instruct its officials to use only those statistical methods defined by FSIS for determining the compliance of a FSIS inspected and passed production lot, but examined at the site other than the official establishment. These are defined as Category A Sampling Procedures in the National Bureau of Standards Handbook 133, Second Edition.
2. Instruct its officials to take action on lots of products outside of the Federal establishment only if in agreement with the contents of this Memorandum of Understanding, including the procedure in Annex A.
3. Instruct its officials when using dry tare and when a lot of a product is out of compliance to proceed with whatever action is appropriate. (However, the weights and measures agency is encouraged to contact the FSIS Inspector-in-charge at the producing establishment to determine if additional information is available.) When using the wet tare procedure and the product (lot) value is within the "no decision area" as defined in Annex A, additional information is required. This information is to be obtained by contacting the FSIS Inspector-in-charge at the producing establishment. If the product (lot) value is less than the "no decision area" as defined in Annex A, the State or local official is instructed to proceed with whatever action is appropriate.

4. Instruct its officials to contact the FSIS Inspector-in-charge prior to entering the establishment to determine what information is available at that establishment, e.g., additional lot information, scale programs, total or partial quality control programs, etc. A current FSIS Directory of official establishments is maintained at the FSIS regional offices:

Western Regional Office
620 Central Avenue, Bldg. 2C
Alameda, CA 94501
(415) 273-7402

Southwestern Regional Office
1100 Commerce Street
Dallas, TX 75242
(214) 767-9116

North Central Regional Office
607 E. Second Street
Des Moines, IA 50309
(515) 284-4042

Southeastern Regional Office
1718 Peachtree Street, N.W.
Atlanta, GA 30309
(404) 881-3911

Northeastern Regional Office
1421 Cherry St., 7th Floor
Philadelphia, PA 19102
(215) 597-4217

5. Instruct its officials in the event that they wish to visit the establishment to provide to the FSIS Inspector-in-charge in writing a statement of the purpose of the visit, the identifications of lots of products that include the sampling, tare, and compliance procedures used for the lots that they believe to be suspect due to low net contents; in addition to providing the plant management with the same information.
6. Provide independent authority for its officials to enter a federally inspected establishment in order to review records of net contents of federally inspected products, to examine scales and service records for accuracy and suitability as defined by the current edition of National Bureau of Standards Handbook 44, and to discuss results of their review, examinations, and recommendations with FSIS inspection personnel.
7. Instruct its officials to determine what tare and net content records are needed from FSIS Records for the suspect lots. These FSIS records may be copied, distributed, and removed from the establishment.

Executive Committee

8. Instruct its officials to ask to review establishment-maintained net content records and to recognize that the information on the establishment operation and the specifics of the approved Total or Partial Quality Control Program are proprietary information and are not for copying, distribution, or removal from the site without permission of the Producer's establishment manager. An establishment that is not operating under an approved net content Quality Control Program is not required to share their net content records with FSIS personnel. Such information may be reviewed, copied, distributed, and removed from the plant site only with the permission of the producer's establishment manager.
9. In those situations where the State or local official and FSIS Inspector-in-charge disagree on what action to take, agree to direct the disagreement in writing to the FSIS Regional director in whose region the establishment is located. In the event agreement is not reached in the regional meeting, the disagreement can be appealed to the Administrator, FSIS by the State or local official.

IV. NAME AND ADDRESS OF PARTICIPATING AGENCIES

Food Safety and Inspection Service
U.S. Department of Agriculture
14th and Independence Avenue, S.W.
Washington, DC 20250
State of _____
or

Local Government of _____

V. LIAISON OFFICERS:

Deputy Administrator
Meat and Poultry Inspection Technical Services
Food Safety and Inspection Service

Director _____
Weights and Measures
_____, _____

VI. PERIOD OF AGREEMENT:

This Agreement, when accepted by both parties, covers an indefinite period of time and may be modified by mutual consent of both parties or terminated by either party upon thirty (30) days written notice to the other party.

APPROVED AND ACCEPTED
FOR THE
FOOD SAFETY AND
INSPECTION SERVICE

APPROVED AND ACCEPTED
FOR THE
STATE OF
OR
LOCAL GOVERNMENT OF

APPENDIX C (CONTINUED)

ANNEX A

to the

MEMORANDUM OF UNDERSTANDING

DEFINITION AND SAMPLING PROCEDURES TO DETERMINE LOT COMPLIANCE

SAMPLING PROCEDURES TO DETERMINE LOT COMPLIANCE

The following conditions specify what procedures State and local officials are to use in determining net content compliance of products for meat and poultry Federal regulations:

I. General Requirements

For the purpose of this document a lot is defined two ways. One covers sampling in the official USDA establishment that produces the product and the other covers sampling at sites other than in the official USDA establishment:

- o In official Establishments. Lot means one type and style of product, produced during a period not to exceed one production shift and bearing the same net content statement; except that random weight packages may have differing net weight statements.
- o Sites other than official establishments. Lot means one type and style of product produced by one plant and bearing identical labeling (including the same net content statement) and available for inspection at one place at one time; except that random weight packages may have differing net content statements.

The first decision the official will have to make is which tare system will be used. The two systems are dry tare and wet tare. The decision on which tare to use is based on the State and local agency's policies, the difficulty of using each system at the particular sampling site, and any other factors that the official may consider important at the time.

II. Dry Tare

There are two ways that the official can obtain dry tare estimates for the sample calculations when the sample is being evaluated at sites other than the official establishment that produced the product or lot. Either the tare values can be supplied to the inspector or the official must calculate the value:

Use of information that is made available to the State or local official:

- o When the tare weight of the packaging material is declared on/or included with the package, it may be used to determine net weight by deducting the declared tare from the gross weight.

This method requires FSIS inspection activity to assure accurate labeling for tare declaration as well as net weight declaration. Tare should be reported (in pounds)

to three decimal places or always rounded up to two decimal places. For example 0.023 lb will be rounded to 0.03 lb.

- o When representative tare materials are available, they may be used to counterbalance the scale to deduct from the gross weight.

Direct measurement by the State or local official of used tare materials:

- o Product packaged in impervious material. The packaging material may be wiped dry and weighed or counterbalanced on the scale. Each sample net weight may be determined by the tare for the individual sample or a random selection of a specified number of tare weights may be taken to determine the average tare weight to be deducted from each gross weight to establish the net weight.
- o Product in absorptive material. The packaging material may be dried to determine tare weight. Procedures used in the method for products packaged in impervious materials also are used here.

The statistical procedure to be used with the dry tare system is the one defined as Category A Sampling Procedures in National Bureau of Standards Handbook 133, Second Edition. Also Table 2-12 (from the USDA Manual) from the same handbook is to be used for determining lower limits for individual package values.

If the product (lot) passes the test, no further action needs to be taken. If the product fails the test, then the State or local official may follow any customary compliance action. However, FSIS recommends that the official first contact the FSIS Inspector-in-charge at the producing establishment to determine if any additional material or information is available.

III. Wet Tare System

Definition of Wet Tare that is to be used when a compliance test is to be conducted at sites other than inplant:

- o Net content is determined by weighing the solid portion of the product. Free liquid in a package is considered a part of tare.

WET TARE

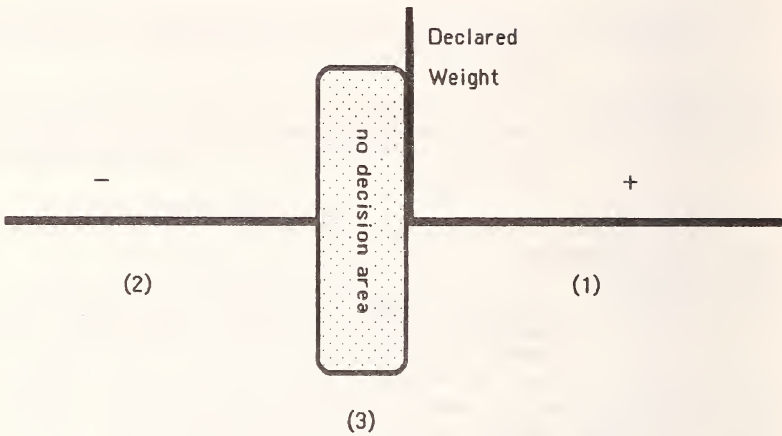


Figure 1
Diagram of the Wet Tare System Results

The wet tare system results are depicted in Figure 1. Compliance is determined by the following states:

1. Product (Lot) passes if sample average is equal to or greater than declared weight.¹
2. Product (Lot) fails if sample average is less than declared weight minus "No Decision Area."¹
3. "No Decision Area" requires additional information before product (Lot) can be failed. This information is to be obtained by contacting the Food Safety and Inspection service Inspector-In-Charge in the plant that produced the product as defined in Section IIIB of this Memorandum of Understanding.

¹If individual weight is less than the values in Table 2-12, Handbook 133 (from USDA manual), then the product (lot) fails regardless of the sample average.

**Table 2-12. U.S. Department of Agriculture, Meat and Poultry,
Groups and Lower Limits for individual packages**

Group Name	Definition of Group (numbers are labeled weight in ounces)		Lower Limit for Individual Weights
	Homogeneous, Fluid When Filled	All Other Products	
A	less than 3		10 % of labeled weight
1	3-16	-	7.1 g 0.25 oz 8/32 oz 4/16 oz 2/10 oz 2/8 oz 1/4 oz
2	over 16	3-7	14.2 g 0.50 oz 16/32 oz 8/16 oz 5/10 oz 4/8 oz 2/4 oz
3	-	over 7 to 48	28.3 g 1 oz
4	-	over 48 to 160	42.5 g 1.50 oz 1 16/32 oz 1 8/16 oz 1 5/10 oz 1 4/8 oz 1 2/4 oz
5	1	over 160	2 oz 1/4 lb

APPENDIX D

REPORT OF THE TASK FORCE ON INFORMATION SYSTEMS

The Task Force met in Sacramento, California for a one-day meeting on April 17, 1986, and also on Sunday afternoon prior to the 71st annual meeting of the NCWM. As a consequence of the April meeting, the Task Force focused its activities in two areas.

One activity was to pursue development of a weights and measures "electronic bulletin board". It was felt that this project could, if successful, provide both short- and long-term benefits to the Conference membership. Short term benefits would include:

- a. an immediate demonstration of practical, computer-based communications between the Office of Weights and Measures (OWM) and the jurisdictions;
- b. providing an enhanced system for rapid transmission of messages between the Conference leadership and OWM irrespective of time zones, office hours kept, etc.; and
- c. an opportunity for jurisdictions to both send and receive timely information concerning weights and measures subjects of general or specific interest.

Long-term benefits of the bulletin board could include:

- a. a means of rapidly sharing significant field inspection data among interested jurisdictions both regionally or nationally;
- b. an expanded capability of the Conference membership to communicate with the Office of Weights and Measures in all subject areas ranging from the Laboratory Auditing Program to handbook updates, training schedules, and useful software programs; and
- c. a time-saving method for communicating, reviewing, and signing off on NCWM committee draft reports, documents, or other Conference business.

The Task Force is pleased to report that through the efforts of our OWM staff advisor, Karl Newell, and the Office of Weights and Measures, the weights and measures "electronic bulletin board" project was successful. The "board" is on line. This "board," called WAMIS (Weights And Measures Information System), is accessible 24 hours a day, seven days a week, by telephone from any member's jurisdiction or member's home equipped with a computer and modem. Use of this system is currently not restricted. It is expected that passwords will later be necessary to access or down-load

certain information. This system is primarily designed for use by members of the National Conference on Weights and Measures. A full description of the WAMIS "bulletin board" system will be available in August 1986.

The second project of the Task Force, as identified at the April, 1986, meeting, was to develop a model format for the exchange between jurisdictions in electronic form of inspection record data pertaining to standard pack packaged products. The Task Force has since concluded this project was premature and has, instead, chosen to approach the needs of the jurisdictions in computerization from several different directions. A primary tool of the Task Force in its redirected effort to assist the jurisdictions will be use of the WAMIS electronic bulletin board.

To facilitate use of WAMIS by Conference members, all members should read and become familiar with the WAMIS USERS GUIDE. If your jurisdiction has (or has access to) a computer and modem with appropriate communications software, please inform Karl Newell of the NBS-OWM staff. Then, with the appropriate WAMIS telephone number and your presently self-selected password, you can dial up and log on as a "board" user. The bulletin service, messaging and communications (including conferencing) capabilities of the system, are currently "up" and available to all users.

As member jurisdictions gain familiarity with the WAMIS "board", new uses will emerge. The Task Force specifically encourages members to submit, in whatever format is convenient to them, data on results of inspections of noncomplying lots of standard pack packaged products encountered in their jurisdictions. This information will assist other jurisdictions seeking to identify problem areas they may wish to look into, and will also assist the Task Force as it seeks to recommend useful minimum standards for the exchange of inspection data electronically.

Other areas of activity for the Task Force on Information Systems during the coming year include:

- a. developing listings in WAMIS of current weights and measures software applications programs in use by various jurisdictions. Such listings might include categorization by type (laboratory area, device inspection, package inspection, etc.), computer language and operating system, file storage requirements, reporting capabilities, etc.;
- b. studying possible changes in the way the WAMIS is accessed so that members who are geographically remote do not have to consistently bear the highest charges (telephone tolls) to connect with the system based in Gaithersburg, Maryland; and

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- c. studying the security needs of WAMIS as its popularity and use increases. This includes the possible need for a verifiable, NCWM-based password system and related measures to minimize the likelihood of unauthorized access to the board and the information on it.

The Task Force thanks the Conference members who have assisted with the work undertaken so far and seeks the continuing interest, input and support from all those who desire to use computers effectively as tools in weights and measures work.

K. J. Simila, Oregon, Chairman
J. F. Lyles, Virginia
J. Rothleder, California
G. W. Hanson, San Bernadino County, California
R. Bruce, Canada
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APPENDIX E

NATIONAL TYPE EVALUATION PROGRAM

Policy and Procedures

Adopted at the 69th Annual Meeting of the National Conference on Weights and Measures.

Revised at the 70th Annual Meeting.

Revised at the 71st Annual Meeting.

Notes:

This revision is proposed by the Executive Committee, sitting as the Board of Governors at the January 1986 Interim Meeting of the National Conference on Weights and Measures. It includes rearrangement of contents and revised and new language to clarify and/or extend policy and procedures based on the recommendations of the Technical Committees, the Committee on Specifications and Tolerances, and other comments made to the Executive Committee.

Rearrangements of Sections are explained in parentheses at the beginning of the rearranged Sections.

Material to be deleted is ~~crossed-through~~

Material to be added is underlined.

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- A. Definitions
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- D. Request for Evaluation
- E. Steps in the Type Evaluation Process
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- G. Kinds of Type Evaluation
- H. What Constitutes a Different Type
- I. What Constitutes a Modified Type
- J. Considerations Preceding Evaluation
- K. Applicants for Evaluation
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- N. Certificate of Conformance
- O. Letter of Nonconformance
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- R. References to NTEP Activities(added at the 70th Annual Meeting)

NATIONAL TYPE EVALUATION PROGRAM

ADMINISTRATIVE PROCEDURES

A.C. DEFINITIONS

(Section C was moved to the beginning and relabeled as Section A to define terms used prior to their use in the text; the text was edited to clarify definitions)

1. "NATIONAL TYPE EVALUATION PROGRAM"

A program of cooperation between the National Bureau of Standards, the National Conference on Weights and Measures, the states, and the private sector for determining, on a uniform basis, conformance of a type of device with the relevant provisions of:

National Bureau of Standards Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices";

National Bureau of Standards Handbook 105-1, "Specifications and Tolerances for Reference Standards and Field Standard Weights and Measures, Specifications and Tolerances for Field Standard Weights (NBS Class F)";

National Bureau of Standards Handbook 105-2, "Specifications and Tolerances for Reference Standards and Field Standard Weights and Measures, Specifications and Tolerances for Field Standard Measuring Flasks"; or

National Bureau of Standards Handbook 105-3, "Specifications and Tolerances for Reference Standards and Field Standard Weights and Measures, Specifications and Tolerances for Graduated Neck Type Volumetric Field Standards".

2. "TYPE EVALUATION"

A process for the testing, examination, and/or evaluation of a type of device by a Participating Laboratory under the National Type Evaluation Program.

3. "TYPE"

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 as specified in the Certificate of Conformance.

4. "PARTICIPATING LABORATORY"

The National Bureau of Standards, or a Federal or a State Measurement Laboratory that has been certified by the National Bureau of Standards, in accordance with its program for the Certification of Capability of State Measurement Laboratories, to conduct a type evaluation under the National Type Evaluation Program.

5. "CERTIFICATE OF CONFORMANCE"

A document issued by the National Bureau of Standards based on testing ~~in~~ by Participating Laboratories, said document constituting evidence of conformance of a type with the requirements of National Bureau of Standards Handbooks 44, 105-1, 105-2, or 105-3.

6. "DIRECTOR"

The Director means the _____ of the Department of _____.

B.A. TYPE EVALUATION PROCESS

(Section A relabeled Section B)

The "type evaluation process" follows a sequence of major steps:

- Request for type evaluation
- Decision to accept or reject the request to conduct evaluation
- Assignment of Participating Laboratory
- Decision on extent of evaluation necessary
- Conduct of the type evaluation
- Evaluation of the type evaluation results
- Preparation of the type evaluation report
- Decision on conformance or nonconformance
- Issuance of the Certificate of Conformance or letter of non-conformance

C. ADMINISTRATION OF THE PROGRAM

(A new Section C is added to define organizational responsibilities)

The National Type Evaluation Program is operated by the following organizations.

1. Board of Governors.

The Executive Committee operates as the NTEP Board of Governors and is responsible for the operation of the program including the establishment of policy and procedures, and the resolution of technical issues (see Bylaws, Article V, Section 5).

2. NTEP Advisory Committee.

The NTEP Advisory Committee is composed of Associate Members of the NCWM appointed by the NCWM Chairman to represent the interests of industry in advising the Board of Governors (see Bylaws, Article V, Section 5).

3. Technical Committee on National Type Evaluation.

The Technical Committee on National Type Evaluation includes the NTEP Advisory Committee plus Active Members of the NCWM appointed by the NCWM Chairman and is responsible for the development of test criteria and procedures for use by the Participating Laboratories in the evaluation process.

4. The National Bureau of Standards.

The NBS Office of Weights and Measures (OWM) provides:

a. technical and administrative support to the National Type Evaluation Program. (see NBS SP 250 Appendix, November 1985, page 37); and

b. the Secretariat for the National Conference on Weights and Measures (see NBS SP 250, 1982 Edition, Chapter X.H.).

In these roles, the OWM:

c. administers the Program including the receipt, review, and recording of the requests for evaluations;

d. assigns the responsibility for evaluations to Participating Laboratory and maintains records to provide knowledge of the progress of the evaluations;

e. evaluates the qualifications of potential Participating Laboratories and issues Certificate of Authorization to those complying (see NBS Handbook 143, Part II for criteria);

f. functions as a Participating Laboratory;

g. reviews Reports of Tests prepared by Participating Laboratories and makes decisions regarding compliance of the tested devices with NBS Handbook 44, and issues the Certificates of Conformance or Letters of Nonconformance; and

h. maintains records of Certificates of Conformance issued and updates composite record annually.

D. REQUEST FOR TYPE EVALUATION

(A new Section D is added to describe procedure for requesting type evaluation)

To obtain a type evaluation:

1. address a letter requesting the evaluation and authorizing the billing of all costs to

National Type Evaluation Program
c/o National Conference on Weights and Measures,
P.O. Box 3137, Gaithersburg, MD 20878;

2. attach the appropriate Application Form (see draft NBS Handbook 144), giving the requested description of the device, including its operating characteristics and instructions, its intended application, model number, capacity, size, and shipping weight; and

3. following acknowledgement of request by OWM, ship the device intact and ready for evaluation to the assigned testing location (if special installation arrangements are required, they must be made by the requestor prior to the time of evaluation).

The Certificate of Conformance provides the evidence to be used by the Director for permission to sell those devices that have been manufactured to replicate the approved devices. Applicants for evaluation are, therefore, implying that the instruments later sold will be manufactured to replicate the approved device. The applicant must be, therefore, the manufacturer himself or a representative properly authorized by him for purposes of evaluation requests.

Examples of potential applicant for evaluation are:

1. the manufacturer, including assemblers of systems comprised of subsystems produced by various manufacturers
2. manufacturer's sales representatives

**E.B. STEPS IN THE "LEGAL METROLOGY CONTROL SYSTEM" TYPE
EVALUATION PROCESS**

(Section B was relabeled Section E and expanded to provide more detailed policy regarding pre-evaluation decisions)

The type evaluation process is the first step of regulatory involvement in the legal metrology control system.

1. Classes Accepted and Conditions for Evaluation.

Devices intended for use as Class I, II, III, or IIIL will be accepted for type evaluation providing:

a. test criteria and procedures are contained in NBS Handbook 144 (see special provisions for exceptions); and

b. facilities are available to conduct the evaluation. (see options available to Participating Laboratories).

2. Initiation of Evaluation Process.

~~Commonly~~, The type evaluation process is initiated when a manufacturer with an established manufacturing process submits production line instruments for type evaluation. Similarly, an importer submits the device he plans to import for evaluation (see Section D).

A manufacturer will normally submit a prototype device for evaluation before establishing an assembly line. (In some instances, a manufacturer may confer even earlier in the design stages, making use of drawings, schematics, etc.) It is not anticipated that a production unit will be tested under NTEP unless the manufacturer submits such a unit. (Production units are also subject to initial and periodic inspection by state and local officials.)

3. Manufacturers Options.

(This paragraph was moved from former Section J.3. "Choice of Testing Laboratory)

Normally, the manufacturer may select the ~~testing~~ Participating Laboratory preferred. Usually, the choice is based on location. Cooperation between the manufacturer and NTEP will be advantageous.

NTEP will try to honor the request. If another Participating Laboratory could conduct the evaluation sooner, the manufacturer will be given the opportunity to change the request. NTEP has the final authority to assign the ~~testing~~ Participating Laboratory.

*See "An SMA Recommendation for a Legal Metrology Control System," NBS-Special-Publication-566, pages-64-87--

4. Participating Laboratories - Options.

(This paragraph was expanded to describe NTEP policy regarding options available to Participating Laboratories)

It is anticipated that the type evaluation process normally will be conducted in ~~authorized~~ Participating Laboratories.

a. NTEP Policy to Minimize Program Cost

A policy of the NTEP is to minimize the cost of the Program to all parties. In some circumstances, testing in other laboratories might be warranted as long as the testing is under the supervision of the representative(s) of an ~~authorized~~ Participating Laboratory. Laboratory facilities that the Participating Laboratories may consider using to augment their own capability include those belonging to:

- (1) device manufacturers;
- (2) independent testing organizations; and
- (3) other Federal or state government agencies.

b. Pre-evaluation Considerations.

The Participating Laboratories should consider the following before proceeding with an full evaluation:

- (1) availability and credibility of test data provided by the manufacturer as evidence of conformity of the type (or main elements/components) to Handbook 44; such test data must be equivalent to that which would be produced by a Participating Laboratory; and/or
- (2) availability of manufacturer or third party facilities in the absence of needed facilities in, or to augment facilities of, the Participating Laboratory.
- (3) the type applies new technology with which NTEP has not dealt before, and/or the Participating Laboratories lacks the facilities or knowledge necessary to carry out some of the required evaluations.
- (4) The type is not portable and must be assembled at a user site in which case at least part of the evaluation must take place in situ. Different aspects of a given evaluation can be carried out at different sites for convenience, such as at the factory, in a laboratory, and at a user location.

c. Evaluation of Production Device.

If a production device is submitted to the NTEP for evaluation, the evaluation effort might be substantially less if the laboratory has had preliminary data about the performance of the device, especially if new technology or concepts are being used.

5. Safeguarding Proprietary Information.

In the course of the process, the NTEP (and authorized Participating Laboratories) often becomes privy to proprietary information related to the device, manufacturing techniques, etc. These agencies are bound to protect this information and must carefully limit access to it, or to data concerning the type generated by these agencies, to properly authorized organizations or individuals, e.g., the applicant or the manufacturer only.

F. ~~D~~ EXTENT OF EVALUATION

(Section D relabeled as Section F and expanded to describe the conditions for limiting the testing for full evaluation)

The extent of type evaluation includes Full and Provisional ~~is~~ as follows.

1. FULL TYPE EVALUATION

In general, the type evaluation must be ~~regarded as~~ full or complete despite the fact that any type is subject to a variety of conditions that may justify limiting the scope of the evaluation.

a. Conditions for Limiting Evaluation.

The Possible conditions for which the evaluation might be limited yet result in a full of approval are-many-and include:

- (1) restricted application of the type ~~device~~;
- (2) size or configuration;
- (3) evidence that performance of the type is not affected by certain factors;
- (4) prior approval of main elements and/or components;
- (5) requirements concerning installation, safeguarding, maintenance, recalibration; and
- (6) evidence of approval by an O.I.M.L. member country whose program is recognized by the Board of Governors.

b. Restricted Application.

These conditions may be inclusive or exclusive as in "...for use in measuring the volume of only water..." or "...not for use in measuring corrosive liquids..."

c. Size or Configuration.

Types of capacity exceeding 2000 pounds fall into this category because of the inability to test the type as a single entity for conformance under the effects of influence factors due its size.

In such cases, NTEP will consider the successful evaluation of the main elements and components as a full type evaluation. Certificates of Certification will be issued for type indicating and weighing elements and Reports of Test will be issued for type load cells meeting the performance requirements of Handbook 44 (including the influence factors). The following procedure will be followed:

(1) indicating elements will be evaluated in an environmental chamber with a load cell or load cell simulator located outside the chamber;

(2) weighing elements will be tested with individual load cells mounted in a test rig equipped with a temperature chamber;

(3) when tested for influence factors, load cells may be tested one of two ways (NTEP will not accept test results in which a load cell is used as a transfer standard - dead weights must be used):

(a) if the load cell is to be used in a system as the only load cell, it must meet 0.7 of the applied tolerance;

(b) if the load cell is be used in multiple load cell systems, two cells should be submitted and both must meet the applied tolerance.

d. Not Affected by Certain Factors.

If evidence confirms that the performance of a type is not affected by selected or all influence factors, the NTEP will waive requirements to apply related tests.

(1) The following exemptions from testing are recognized by NTEP:

(a) electrostatic discharge - the device will fail to function precluding weighing problems;

(b) spikes and bursts - not a Handbook 44 requirement;

(c) barometric pressure (other than hydraulic and canister load cells);

(d) beam/lever scales; and

(e) all influence factors for types or their main elements and components which will be used only in locations where the operating environments are controlled for temperature and humidity (providing that the humidity is maintained below 85 %.

(2) The following testing will be limited:

(a) voltage tests will be conducted over a range of voltages as currently conducted for AC and DC.

e. Prior Approval of Elements/Components.

NTEP may waive the requirement to evaluate a type (of any capacity), all of whose main elements and components have been evaluated under NTEP and received Certificates of Conformance or Reports of Test in the case of load cells.

f. Approval by an OIML Member Country.

(See Section G.4.) NTEP may waive the requirement to evaluate a type, or individual main elements or components, which have been approved by an OIML member country whose program has been accepted by the NTEP.

g. Permanence Test.

In those cases where a permanence field test is required under NTEP, it is a part of the "full" type evaluation.

2. PROVISIONAL EVALUATION

Under some circumstances, a type may be approved for legal use before full evaluation has been completed. Such an approval is referred to as provisional.

In accepting Granting of a provisional approval, the manufacturer shall agree be-qualified in writing

a. that the Provisional approval will be granted with the understanding that further evaluation will take place before full approval can be considered; and

b. that existing copies of the type the manufacturer will be modified or retrofited if required.

Use of the Provisional Evaluation will be minimized, and will be subject to authorization by the Board of Governors.

Provisionalevaluation approval may, for example, be granted after only partial or limited evaluation when an urgent need for use of the device exists, and the NTEP is temporarily unable to carry out a complete evaluation.

G.E. KINDS OF TYPE EVALUATION

(Section E relabeled Section G)

The kinds of type evaluation ~~discussed in this section~~ are distinguished from each other primarily by the reason for the evaluation, and will ~~in turn call for require all or selected portions of the evaluation procedure to be followed. They are: can-be-categorized-as-follows.~~

1. INITIAL EVALUATION

Initial evaluation is one of a device not previously evaluated under the NTEP. While this will often be a complete evaluation, previous experience with the manufacturer or with similar types ~~of instruments~~ may indicate that only a ~~partial or~~ a limited evaluation will suffice.

2. REEVALUATION

NTEP may, for good reason, decide to reevaluate a type that it has previously evaluated. Such a type may or may not have previously been approved. Reevaluation of a type is considered only for cause; that is, when:

- a. new regulations are issued or,
- b. new, important information concerning the type or its evaluation becomes known.

Reevaluation may result in issuance of a certificate of conformance, letter of non-conformance, an amendment of the previous certificate, or withdrawal of the certificate.

3. AMENDMENT TO CERTIFICATE OF CONFORMANCE

A type with a currently valid certificate of conformance may be evaluated in order to extend application of the type. Such an extension might, for example, be requested to recognize a change in the range of the measured quantity or ~~for~~ the kind of commodities that may be measured.

In most such cases, evaluation to determine the validity of the amendment will be sufficient; that is, the evaluation(s) will not go through the entire check list, but will test through the entire range of performance.

4. EVALUATION OF A TYPE PREVIOUSLY APPROVED BY PRE-NTEP JURISDICTION

A type that has already been approved in one or more jurisdictions may be submitted for evaluation under NTEP.

Discussions with the approving jurisdiction(s) might lead to the conclusion that the device meets all requirements of NTEP, in which case, an NTEP Certificate of Conformance will be issued without formal testing.

The NTEP may accept data obtained in or conclusions drawn from prior evaluation.

The NTEP may conclude that ~~partial or~~ limited evaluation will suffice to check for differences in the requirements of the testing jurisdiction and NTEP.

Prior to an NTEP evaluation, the report of the previous evaluation and regulations under which the prior evaluation was made will be examined, and a decision will be made to what extent the former evaluation can be accepted. This decision may be based in part on the similarity of requirements in the two cases and on the policies and reputation for competence of the pre-NTEP jurisdiction.

5. EVALUATION OF A TYPE NOT PREVIOUSLY APPROVED

Many devices in use have never undergone type evaluation either at the NBS or by a state. In such cases, request for evaluation under NTEP is at the option of the manufacturer.

It is possible that some such devices would not meet the requirements of the NTEP; however the assumption is made that all devices in use meet the requirements of Handbook 44 since they have undergone testing in the jurisdiction of the state(s) in which they are installed. The NTEP has no authority to change the status quo in these instances, even if inequities appear to exist.

6. DEVELOPMENT OF NEW CRITERIA AND PROCEDURES

(This Section is modified significantly in order to clarify the procedures to be followed in the development of new test criteria and/or procedures)

Type evaluation often deals with innovation and the application of new technology. It is anticipated, therefore, that the NTEP will encounter features to be tested for which no criteria or procedures have been developed.

In such cases:

a. the necessary criteria and/or procedures will be developed, ad hoc, by the NBS and participating laboratory representatives as expeditiously as possible;

b. these criteria and/or procedures will be submitted to the NTEP Technical Subcommittee either by letter ballot, regularly scheduled meeting, or at a specially called meeting, depending on the complexity or sensitivity of the material;

c. that material accepted by the Technical Committee will be introduced into the normal NCWM process:

(1) if changes are required in NBS Handbook 44, through the S & T Committee and subsequently submitted to the Executive Committee (Board of Governors), and to the NCWM membership for adoption of the changes in Handbook 44 and of the test criteria and procedures as part of the NTEP Handbook on Criteria and Procedures.

(2) if no changes are required in NBS Handbook 44, through the Executive Committee (Board of Governors), and to the NCWM membership for adoption of the test criteria and procedures as part of the NTEP Handbook on Criteria and Procedures.

(3) Pending completion of the administrative process, (a) and/or (b), the NTEP will issue a provisional Certificate of Conformance (provided the device meets the requirements of the proposed criteria and/or test procedures).

It is conceivable that a new feature or technology incorporated in the device being evaluated might not meet current NTEP requirements but is appropriate for its intended commercial use. In such a case, the NTEP can WAIVE or ALTER what is current practice, and issue a Provisional Certificate of Conformance pending adoption of the change(s) by the NCWM process.

If there is an NTEP consensus on the recommended criteria and procedures, AND the device meets the new requirements, the follow-up process is administrative. If no consensus can be reached on the criteria or procedures, but the device meets the requirements as proposed by the NBS and Participating Laboratories, a provisional approval will be issued. If more demanding criteria or procedures are subsequently proposed and adopted, the device will be tested under these criteria or procedures.

The costs associated with the development, testing, and adoption of the new criteria and procedures will be absorbed by the NTEP program.

H.F- WHAT CONSTITUTES A "DIFFERENT" TYPE?

(Section F relabeled Section H and edited to improve understanding)

When two types (of a single manufacturer) are very much alike, a decision must be made whether one or two separate evaluation processes must be followed. Guidelines intended to help with such decisions follow.

1. SUPERFICIAL DIFFERENCES BETWEEN DEVICES

Different types produced by a particular manufacturer that are identical in design, materials and components used, and measurement ranges, but that differ superficially in their enclosure, detailed size, color, or location of non-metrological appointments (~~flasher~~ function lights, display location, ~~button~~ operational key locations, etc.) can normally be regarded as being of the same type and covered by a single evaluation.

2. COMPONENT VARIATIONS

Types produced by a particular manufacturer with nominally identical components or materials that have been procured from different suppliers, can usually be regarded as the same type. They ~~and~~ will be covered by a single evaluation if the different components or materials are not expected ~~can~~ be to affect the regulated metrological characteristics, reliability, or life of the devices.

If ~~When~~ substitution of such components or materials may affect the characteristics, etc., separate evaluations may be required.

I.G- WHAT CONSTITUTES A "MODIFIED" TYPE

(Section G relabeled Section I)

When a manufacturer makes changes related to an approved type, evaluation of the modification may be necessary. A type is considered MODIFIED if change is made that alters some metrological or technical characteristic.

J.H. CONSIDERATIONS PRECEDING EVALUATION

(Section H relabeled Section J)

Certain considerations that are not part of the type evaluation process itself and that must precede it are discussed in the following paragraphs.

1. REASONS FOR INITIATING PROCESS

Reasons for initiating evaluation are listed below.

- a. new type
- b. existing type not previously evaluated for legal use or not evaluated by NTEP
- c. new application of an evaluated device
- d. modification of an approved device
- e. previous rejection or withdrawal of certificate of conformance coupled with newly presented facts concerning the device, improvements to the device, or a change in regulations.

2. RESPONSIBILITY FOR REPORTING OCCURENCE OF MODIFICATIONS

The manufacturer is responsible for reporting changes that might require the attention of the NTEP; the decision to report must be dictated by the significance of the modification. Admittedly, the manufacturer will have to cope with the consequences in the marketplace if he decides that the modification is not of any significance and, in fact, it does prove to be significant. When reporting a change, the manufacturer shall follow either (a) or (b) below:

a. Notification of Change.

The manufacturer notifies the NTEP that a change has been made or is contemplated for an approved device. On the basis of the notification, the NTEP will decide whether to take no further action, issue an approval of a modification, or issue a new approval. NTEP will inform the manufacturer accordingly.

b. Request for Acceptance of Modification.

The manufacturer may make judgments concerning the modification and request issuance of an approval of a modification by citing the existing approval, detailing the changes, and giving any data, analysis, and conclusions concerning the technical or metrological consequences of the changes. Before taking further action, the NTEP will review the request to confirm the manufacturer's judgment in deciding to request approval of a modification as opposed to requesting a new evaluation.

(The following Section was eliminated and its language was incorporated in Section E.3.)

~~2. CHOICE OF TESTING LABORATORY~~

~~Normally, the manufacturer may select the testing Laboratory preferred. Usually the choice is expected to be based on location.~~

~~NTEP will try to honor the request. If another Laboratory could conduct the evaluation sooner, the manufacturer will be given the opportunity to change the request. NTEP has the final authority to assign the testing Laboratory.~~

~~When new technologies are applied to devices or when the NTEP is faced with evaluating categories of devices with which it has not dealt previously, it may find that it lacks the facilities or knowledge necessary to carry out some of the required evaluations. In such cases, it will turn for support to organizations that have the necessary capabilities.~~

~~Organizations that may be considered in these cases are listed below. Not all of these categories or organizations will be available in every case or for every type of device.~~

- ~~--other-government-laboratories~~
- ~~- laboratories of independent test organizations or of universities~~
- ~~- facilities of a manufacturer with approval of the applicant.~~

~~A type may usually be evaluated in the laboratory to which the subject instruments are taken. When devices or systems are not portable and must be assembled at a user site, at least part of the evaluation must take place in situ. Different aspects of a given evaluation can be carried out at different sites for convenience, such as at the factory, a laboratory, and a user location.~~

~~(The wording of the former "Section I. Applicants for Evaluation" was transferred to Section D.)~~

~~L.J. PERIOD OF VALIDITY OF APPROVAL.~~

~~(Section J relabeled Section L)~~

Approval may cease to be valid when predetermined conditions are either met or not met (see Paragraph 1, below) or when approval is withdrawn as the result of a specific determination by the NTEP (see paragraphs 2 and 3, below). The questions of when and why an approval may lose validity is discussed in the following.

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1. MAINTENANCE OF CERTIFICATE OF CONFORMANCE

Maintenance of approval depends on the performance of the device in use and in the course of periodic field verifications. Maintenance of approval may be made contingent on specific conditions; for example, minimum performance upon initial verification that devices of the type must continue to meet.

2. WITHDRAWAL OF CERTIFICATE OF CONFORMANCE

Approval may be withdrawn for various reasons. These include:

- a. identification of deficiencies in the type not discovered before approval;
- b. changes in regulations to take account of more stringent needs;
- c. advances in the state-of-the-art; or
- d. new technologies.

Withdrawal of approval will, however, be a last resort action.

The decision for withdrawal must be clearly established on the basis of evidence assembled by the Program administrator (the Executive Secretary). If the manufacturer agrees with the proposed withdrawal, notice of the action will be sent to each state Director.

3. FEEDBACK

The evaluation process under NTEP can generate only limited data. The data gathered during the initial and subsequent verifications of a larger number of devices of a given model will, when systematically analyzed, often yield information not available from the type evaluation. Such feedback can be used as the basis for revising the conditions of approval when the situation so warrants.

Depending on circumstances, the experience gained during verifications may justify later changes in the approval; in extreme cases, it might result in withdrawal of the Certificate of Conformance.

M.K. RESULTS OF EVALUATION.

(Section K relabeled Section M)

The results of evaluation include both a report of objective findings and a report of conclusions and recommendations made concerning approval. These may be given in a single document or in two separate documents as indicated below. Separate documents are especially appropriate when evaluation and approval are the responsibilities of different officials (for example, when testing of the device is carried out in a state laboratory and approval is issued by NBS). These reports will be retained permanently by the NCWM.

1. REPORT OF OBJECTIVE FINDINGS

The report will be a permanent, objective record of the evaluation process and its results, against which future evaluations can be compared. It will identify the type, components and salient documents examined, personnel and laboratories that carried out the evaluation, and any special procedures, standards, and equipment used in the process. It will contain important data, ambient conditions, and the time data were taken, or identify the repositories of such data and the values of measured metrological characteristics and the associated uncertainties. These characteristics will include all those subject to requirements in regulations and those that will form the basis for the definition of the type. To the extent that findings are not based on measurement, but on visual inspection, they will be as objective as possible in each instance.

2. REPORT OF CONCLUSIONS AND RECOMMENDATIONS RESULTING FROM EVALUATION

The report giving conclusions and recommendations will be based on the findings of the Participating testing Laboratory and will provide the basis for a decision regarding approval or non-approval.

The recommendation can, for example, be one of the following:

- a. Certificate of Conformance
- b. Provisional Certificate of Conformance
- c. Rejection (unqualified); the main reasons for rejection should be given
- d. Recommendation that the type be rejected, but that it be approved in the future if specified modifications are made to the satisfaction of the Participating Laboratory, as may be demonstrated by a partial reevaluation
- e. Recommendation that the type be rejected, that the applicant be adequately informed about its deficiencies, and that the type be accepted for a complete reevaluation in the future, provided the applicant declares that the deficiencies have been corrected.

3. DEFECTIVE EVALUATION

If a device has a significant area of non-compliance that was overlooked in a type evaluation under NTEP, costs of re-evaluation will be borne by the testing Participating Laboratory. Every effort will be made by the NTEP to afford the manufacturer in such cases with adequate time to meet requirements including time to modify and/or retrofit the devices in use.

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If a device for which a Certificate of Conformance was issued is later found (in use) to have a feature that was not operational or present during the NTEP evaluation, the Certificate of Conformance is subject to withdrawal whether or not the feature is believed to meet the requirements of Handbook 44. If the manufacturer requests a re-evaluation with the new feature, and the device is approved, an amendment to the Certificate of Conformance will be issued. If the device does not meet approval as a result of the new feature, the Certificate of Conformance will be withdrawn.

Whether the device is approved or not, the manufacturer will be responsible for reimbursing the NTEP for costs incurred in the reevaluation.

N.L. CERTIFICATE OF CONFORMANCE

(Section L relabeled Section N)

The Certificate of Conformance (see next page) may include the following information:

1. APPLICATION OF THE TYPE

- a. approved ranges
- b. maximum capacity
- c. reference conditions
- d. normal conditions of use
- e. approved subjects of measurement: physical quantities, commodities, materials, objects, or phenomena that may be measured
- f. special restrictions on application

2. ACCURACY

- a. accuracy class
- b. nominal error(s); maximum permissible error(s)
- c. required use of calibration charts, corrections, or instrument constants

3. REQUIREMENT OF MANUFACTURER

- required name plate information and stamps, marks, and seals affixed at the factory

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

Executive Committee

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", "recommended", 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).

4. REQUIREMENTS FOR USE

- a. installation requirements
- b. legally required auxiliary equipment and its minimum characteristics
- c. in the case of approval of auxiliary equipment, identification of the measuring instruments in conjunction with which it may be legally used
- d. Operating instructions

5. SUMMARY OF FINDINGS

The summary lists the characteristics, attributes, and conditions of the type that are subject to regulation.

O.M. LETTER OF NONCONFORMANCE

(Section M relabeled Section O)

A letter of nonconformance will include the following information

1. applicant, manufacturer, manufacturer's type for which application was made
2. applicable regulations
3. specific components, and salient documents examined
4. characteristics and the values of their parameters found to be deficient as well as the corresponding acceptable values
5. other conditions not fulfilled (when there are many reasons for rejection, only the major reasons will be given)

When reasons for non-conformance are based on relatively small deficiencies or when deficiencies can be easily corrected, the letter may list changes that would make it acceptable and, perhaps, invite resubmission of the request after these changes have been made.

P.N. APPEAL PROCESS.

(Section N relabeled Section P)

If at any stage in the evaluation process, especially that involving a decision to NOT issue a Certificate of Conformance or to WITHDRAW a previously issued Certificate of Conformance, the manufacturer may request review of the decision.

The first level of review will be the NTEP Board of Governors. The Board will, if requested by the manufacturer, review the case and either endorse the decision or pass it to the NBS for review. (In their evaluation, the Board may request the advice of the Advisory Committee)

The second level of review will be the NBS, the issuer of the NTEP Certificates of Conformance. If the NBS confirms the recommendation of the NTEP, and the manufacturer disagrees at this stage, he may appeal the decision through the Federal Government process.

Q. ~~Q~~ DISTRIBUTION OF OUTPUTS OF EVALUATION.

(Section O relabeled Section Q)

In all cases, a Certificate of Conformance, a letter of nonconformance, amendment to an existing certificate, or similar document reflecting the approval decision will be sent to the applicant at the earliest possible time. NTEP will send to the applicant copies of, or excerpts from, the reports of evaluation and of conclusions and recommendations.

The Certificate of Conformance will also be sent to all the states and major jurisdictions. An Annual Report will be published in the proceedings of the NCWM. The content of the report will also be published providing the following information:

1. Number assigned to the Certificate of Conformance
2. Date Certificate of Conformance is issued
3. Company name
4. Model designation
5. Brief description of model
6. Capacity

RP. ~~R~~ REFERENCES TO NTEP ACTIVITIES

(Section P relabeled Section R)

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 avoid all inference that the Certificate of Conformance carries with it an endorsement or approval of the product by the National Bureau of Standards.

Executive Committee

Issuance of the Certificate of Conformance by the National Bureau of Standards "constitutes evidence of the conformance of a type 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 Approval Evaluation Program of the National Conference on Weights and Measures."

(2) Logo

The NTEP Logo (see below) may be:

(a) 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

(b) 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 Participating 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 weighting or measuring devices (see Section A. 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

Executive Committee

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.

REPORT OF THE COMMITTEE ON LAWS AND REGULATIONS

Don Stagg, Chairman
Director, Weights and Measures Division
State of Alabama

REFERENCE KEY

200 INTRODUCTION

The Committee on Laws and Regulations submitted its report to the 71st National Conference on Weights and Measures (NCWM). This report resulted from consideration of all communications received by the Committee as well as discussions at the Interim Meeting, January 21-25, 1986, and the Annual Meeting July 20 and 21, 1986. Much of the report contains recommendations to revise or amend National Bureau of Standards NBS Handbook 130, 1986 Edition, "Uniform Laws and Regulations and NBS Handbook 133, Second Edition, "Checking the Net Contents of Packaged Goods." Proposed revisions to these handbooks are shown in **bold face print** by ~~crossing out~~ what is to be deleted, and underlining what is to be added. Entirely new sections to these handbooks are designated as such and shown in **bold face print**.

Items are grouped into the following series for ease of reference:

HANDBOOK 130	210 Series
Uniform Weights and Measures Law	211 Series
Uniform Weighmaster Law	212 Series
Uniform Packaging and Labeling Regulation	213 Series
Uniform Regulation for the Method of Sale of Commodities	214 Series
Uniform Unit Pricing Regulation	215 Series
Uniform Regulation for the Voluntary Registration of Servicepersons and Service Agencies for Commercial Weighing and Measuring Devices	216 Series
Uniform Open Dating Regulation	217 Series
Uniform Regulation for National Type Evaluation	218 Series
HANDBOOK 133	230 Series
OTHER ITEMS	250 Series

This year's report did not contain any items in the 215 through 218 series.

Table A (next page) identifies all of the items contained in the Report by Reference Key Number, Item Title, and Page Number.

The titles of voting items are identified in **bold face print** as is the key text upon which a vote is to be taken. All other items listed are information items.

Before voting on July 24, 1986, the Committee grouped the less controversial voting items into a "consent calendar" which was voted upon as a block. These items are marked after the item number with a "VC", e.g. "210-2 VC". Separate voting items are marked with a "V". Information items are not marked.

Table A
REFERENCE KEY ITEMS AND INDEX

Reference Key No.	Title of Item	Page
	HANDBOOK 130	
210-1	Proposed Uniform Motor Fuel Law and Regulation	134
210-2 VC	Handbook 130 Review	139
	UNIFORM WEIGHTS AND MEASURES LAW	
211-1	Section 1.2. Weight/Net Weight Sales from Bulk	140
211-2 VC	Section 20. Declarations of Unit Price on Random Weight Packages	142
212	UNIFORM WEIGHMASTER LAW	142
	UNIFORM PACKAGING AND LABELING REGULATION	
213-1	Proposed Section 2.9. Definition of "Petroleum Products"	143
213-2 VC	Sections 3.1. and 4. Declaration of Identity/ Clearly Revealed	143
213-3 VC	Sections 6.7.1., 6.7.2., 6.8.1., 6.8.2.(c), 6.10.(d)/Random Pack Provisos	144
213-4 VC	Section 6.11.3. Rounding	144
213-5	Section 10.3./Aerosol Paints	145
213-6 VC	Section 11.23.(b)/Tint Base Paint	146
	UNIFORM REGULATION FOR THE METHOD OF SALE OF COMMODITIES	
214-1 VC	Section 1.3. Butter, Oleomargarine, Margarine, Butter-Like, and/or Margarine-Like Spreads	146

Table A (Continued)
REFERENCE KEY ITEMS AND INDEX

Reference Key No.	Title of Item	Page
214-2 VC	Section 1.5.3. Clams, Mussels, and Oysters	147
214-3 VC	Section 1.7.1. Ice Cream/Reference to Handbook 44	149
	UNIFORM REGULATION FOR THE METHOD OF SALE OF COMMODITIES	
214-4 V	Section 1.7.2. Ice Cream and Frozen Dessert Novelties (a) Method of Sale (b) Test Method	150
214-5 VC	Section 2.19. Gasoline-Alcohol Blends	153
214-6 V	Proposed Section 2.20. Liquefied Petroleum Gas	154
	HANDBOOK 133	
230-1	Tables 2-8 and 2-9/MAV's for Individual Packages Labeled by Weight or Volume	155
230-2 VC	Borax	156
230-3	FTC Policy Regarding H-133	160
	OTHER ITEMS	
250-1	Energy Allocation Systems	160
250-2	Task Force on Commodity Requirements	161
250-3	Polyethylene	161

In addition, the Report contains two appendices: Appendix A, related to Reference Key 211-1, begins on page 162 and Appendix B, related to Reference Key 230-3, begins on page 166.

ORDER OF PRESENTATION

Separate votes of the NCWM were requested on two items, 214-4 (Ice Cream and Frozen Dessert Novelties) and 214-6 (Liquefied Petroleum Gas). The results of the voting on these items are summarized in Table B. In addition, the Committee split item 214-4 into two parts prior to the final

vote, (a) Method of Sale and (b) Test Method. Discussion of the voting on Item 214-4 is explained at the end of that item.

After its separate voting items were acted upon, the consent calendar was presented and adopted. Then the report was adopted in its entirety by the membership.

Table B
VOTING RESULTS

Reference Key No.	House of State Representatives			House of Delegates	
	Yes	No		Yes	No
214-4 (a) amendment	27	11	Failed	25	44
214-4 (a) original	12	27	Failed	46	23
214-4 (b)	39	2	Passed	43	25
214-6	27	12	Passed	47	21

DETAILS OF ALL ITEMS
(in order of Reference Key Number)

HANDBOOK 130

210-1 PROPOSED UNIFORM MOTOR FUEL LAW AND REGULATION

(This is an information item)

See also Item 507 in the Liaison Committee report.

The Task Force on Motor Fuels has drafted a Uniform Motor Fuel Law and a Uniform Motor Fuel Regulation to accompany the law. The proposed law will require registration and certification of the motor fuel as meeting American Society for Testing and Materials (ASTM) standards. The regulation of motor fuel quality will require the establishment of a motor fuel quality testing capability by the State. It is proposed that funds to install and support such a testing capability be raised by establishing a fee per gallon on all fuel marketed within a State.

The fuel quality standards that are proposed by the Task Force to be adopted by States are ASTM standards. The standard for gasoline and gasoline-alcohol blends is ASTM P176 "Proposed Specification for Automotive Spark-Ignition Engine Fuel". While it might be possible to consider the

proposed law and regulation this July, the Task Force recommends a year's delay by the NCWM to allow ASTM to confirm new test procedures for oxygenated fuels and the ethanol industry to evaluate the impact of ASTM P176.

It has also been recommended that the Proposed Uniform Motor Fuel Inspection Law recognize gasoline-alcohol mixtures that have waivers from the Environmental Protection Agency. The Committee will address the issue of exempting these products from the ASTM volatility standards at the next Interim Meeting.

Section 3 of the Proposed Uniform Regulation for Motor Fuel is identical to Section 2.19. in the Uniform Regulation for the Method of Sale of Commodities. The latter is consent voting item 214-5. Whatever changes are made to Section 2.19. by the Conference vote will be reflected in the next draft of the regulation to be studied by the Committee at the next Interim Meeting.

The Committee therefore provides the following proposed law and regulation for information. The Committee intends to recommend adoption of this proposal in July 1987, at the 72nd Annual Meeting.

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 _____.

PROPOSED UNIFORM REGULATION FOR MOTOR FUEL

SECTION 1. DEFINITIONS

- 1.1. SPARK-IGNITION MOTOR FUEL. — The term "Spark-ignition motor fuel" means gasoline and its blends with oxygenates such as alcohols and ethers.
- 1.2. GASOLINE-ALCOHOL BLEND. — For labeling purposes, the term "gasoline-alcohol blend" means any spark-ignition motor fuel containing one percent or more by volume, 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 shall meet current ASTM D975, "Standard Specification for Diesel Fuel Oils".
- 2.3. Kerosene shall meet current ASTM D3699, "Standard Specification for Kerosine".

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 1/2 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.

210-2 VC HANDBOOK 130 REVIEW

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

A single subject index for the entire handbook has been prepared and will appear in the next edition of Handbook 130.

Two requests to annotate Handbook 130 with references to Federal requirements were reviewed by the Committee. (These annotations would have appeared principally in the Uniform Packaging and Labeling Regulation.) Mr. James Lyles, Virginia Weights and Measures, provided an older copy of his Handbook annotated with references to the Code of Federal Regulations as he envisioned it should appear. The Committee sees some merit in the work, but does not believe it is beneficial enough to the majority of NCWM members as compared with the additional time and effort required to research and check the references to the Code of Federal Regulations for each annual publication. **Therefore, the Committee recommends against any changes to the Handbook format (except for adding a single subject index for the entire handbook) at this time.** The Committee welcomes any comment or opinion on this issue.

UNIFORM WEIGHTS AND MEASURES LAW

211-1 SECTION 1.2. WEIGHT/NET WEIGHT SALES FROM BULK

(This is an information item)

Retail food stores are merchandising prepackaged commodities such as candies, pet food, snack bars, and bouillon cubes from bulk displays. Some retailers sell these products by gross weight. Section 1.2. of the Uniform Weights and Measures Law reads in part: "The term 'weight' as used in connection with any commodity means net weight..." A copy of a letter to the Chairman of the Conference and his response appear as Appendix A to this report. The Committee applauds the Chairman's response to this request and affirms the need for strong enforcement action in this area, rather than any changes to existing laws or regulations.

A workshop was held on June 20, 1986, at the U.S. Department of Commerce, Washington D.C. to explore the issues and alternatives involved in the sale of prepackaged goods from the bulk food sales areas of supermarkets. Representatives of the packaging, supermarket, and small grocery industries; scale and point-of-sale (POS) systems manufacturers; the U.S. Food and Drug Administration; weights and measures agencies, and the National Bureau of Standards attended. No final recommendations came out of this meeting; however, the participants expressed an interest in meeting again after a written report of the June 20 meeting was made available (expected September 1, 1986) and before the Interim Meetings of the NCWM in January 1987. The issues that were discussed were the following:

- (1) Prepackaged commodities in bulk displays are being sold on a gross weight basis.

Federal regulations covering packaged goods and every state Weights and Measures Law require any sale by weight to be "net weight" (not including the weight of the wrapping materials). In some areas of the nation, many items are being sold on a gross weight basis in the supermarket, for example, fresh fruit and vegetables in poly bags in the produce area. Perhaps because of the light weight of these bags, (that is, the minimum size of the scale division on the ordinary supermarket checkout scale is large with respect to the weight of the poly bags), low priority is given to correcting this sales practice, and a lack of uniformity in enforcement of the net weight requirements results. Weights and measures officials have found tare amounting to over 40 percent of the gross weight in prepackaged items sold from bulk; the majority of cases seems to range from 3 to 12 percent. Officials see the need to "draw the line" in a sales practice that appears to have evolved from other practices that were not heavily monitored and corrected at their inception.

- (2) Retailers face technical and administrative problems in properly deducting tare from the gross weight.

Automatic deduction of tare is preferable for large-scale retailers because of its speed. No equipment (either stand-alone scale or POS) is available at the present time that can: (1) subtract a percentage of the gross weight to represent the tare weight; or (2) subtract a fixed tare for the bag and a

percentage tare for the wrapper on the prepackaged item. Two POS system manufacturers said that new systems with percentage tare capability could be designed, but they could not definitively say whether retrofitting existing systems was possible. They said that the ability to retrofit declined with the age of the system. Supermarket representatives expressed concern that their in-store computer software would need modification above and beyond the retrofitting or software redesign that might be done by the POS manufacturers; their software is designed around current POS software.

Deduction of tare in the bulk food area using a scale other than the checkout scale can be done more easily than at checkout if a POS system is being used. A tare look-up table used in conjunction with the scale appears to be the only currently used method that meets the net weight requirements when packaged products are sold from bulk. (The procedure is to gross weigh the product, look up the tare, subtract it from the gross weight, and then determine a final net weight and total price.)

Each retailer will have to consider the cost of additional manpower (as the weighing and marking of the purchase in the bulk food area might require), new equipment (purchasing scales or POS systems with percentage tare capability), or retrofit of existing equipment as compared with the value of the market share contributed by the bulk marketing of prepacked commodities. However, two supermarket chain representatives said that they expected some growth in this type of sale (because of the customers' perception of cleanliness of the product, for example).

(3) Present methods of sale and advertising are often misleading.

Suggestions were made that advertising on a "wrapped weight basis" would properly inform the consumer. However, it was pointed out that a typical purchaser does not know what "wrapped weight" is, (i.e., gross weight). Moreover, selling packaged goods on a gross weight basis is illegal; it thwarts value comparison with other products sold by net weight.

Bulk food sales advertising often includes claims of savings of, for example, 10 to 20% over a purchase of the same commodity in standard-pack form. These advertising claims can be exaggerated and misleading if the comparisons referenced are between standard-pack commodities sold net weight and products sold from bulk on a gross weight basis.

The possibility of advertising a net weight unit price, but actually weighing at the checkout on a gross weight basis (and charging at a lower gross weight unit price) was discussed. For example, a sign could be posted with the following:

"\$1.50 per pound, net weight. We are not able to weigh this packaged product on a net weight basis (that is, without the wrapper), and will therefore charge you \$1.40 per pound including the wrapper weight at the checkout".

Everyone agreed that advertising claims and appropriate wording would have to be chosen carefully if this is to be viable. However, those weights and measures officials present were generally opposed to this alternative based on the difficulty of enforcement and lack of assurance that a consumer would really understand explanatory signage.

**211-2 VC SECTION 20. DECLARATIONS OF UNIT PRICE ON
RANDOM WEIGHT PACKAGES**

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

The Southern Weights and Measures Association recommended a revision to Section 20 of the Uniform Weights and Measures Law to recognize that a declaration of total selling price, as well as the unit price, is required on random weight packages. The Committee agrees that this section of the Uniform Weights and Measures Law should not confuse or confound other requirements such as Section 11.2. RANDOM PACKAGES of the Uniform Packaging and Labeling Regulation. The proposed revision to Section 20 is:

In addition to the declaration required by Section 19 of this Act, any package being one of a lot containing random weights of the same commodity and bearing the total selling price of the package shall bear on the outside of the package, at the time it is offered or exposed for sale at retail, a plain and conspicuous declaration of the price per single unit of weight pound or kilogram¹ and the total selling price of the package.

¹Packages subject to the Federal Fair Packaging and Labeling Act must be labeled in inch-pound units of measure. Metric units may also be declared on the principal display panel and may even appear first.

UNIFORM WEIGHMASTER LAW

212 UNIFORM WEIGHMASTER LAW

(This is an information item)

As part of its Long Range Plan, the Committee plans to review this law, compare State requirements in this area on a section by section basis with the NCWM recommendation, and revise or amend the law based on its analysis. A survey will be conducted by the Committee; each State Director will receive a questionnaire this summer.

UNIFORM PACKAGING AND LABELING REGULATION

213-1 PROPOSED SECTION 2.9. DEFINITION OF "PETROLEUM PRODUCTS"

(This is an information item.)

The State of California has requested a clarification of what products are "petroleum products" and therefore subject to a reference temperature of 60 °F in the Uniform Packaging and Labeling Regulation, Sections 6.5.(b), 6.6.(b), 7.4.(b), and 7.5.(b). Examples of products that have been questioned include: brake fluid, copier machine dispersant, antifreeze, cleaning solvents, sewing machine lubricant, camping fuel, alcohol, and synthetic motor oil. The Committee had planned to recommend the following definition be added to the Uniform Packaging and Labeling Regulation:

- 2.9. PETROLEUM PRODUCTS.- Gasoline, diesel fuel, kerosene, or any product (whether or not such product is actually derived from naturally occurring hydrocarbon mixtures known as "petroleum") commonly used in powering, lubricating, or oiling engines or other devices. Therefore, sewing machine lubricant, some camping fuels (if kerosene, for example), and synthetic motor oil are "petroleum products." Brake fluid, copier machine dispersant, antifreeze, cleaning solvents, and alcohol are not "petroleum products."

More information is needed to be able to specify which products should have a reference temperature of 60 °F. It was noted, for example, that some cleaning solvents are referenced to 68 °F when sold at retail to consumers; but that the reference temperature is 60 °F when the same product is sold in 55-gallon drums. This item will be carried over to next year.

213-2 VC SECTIONS 3.1. AND 4. DECLARATION OF IDENTITY/CLEARLY REVEALED

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

Virginia Weights and Measures recommended revision to Section 19.(a) of the Uniform Weights and Measures Law (UWML) to eliminate the exemption of an identity statement from packages when the item "can easily be identified through the wrapper or container". The Committee is of the opinion that there is merit in retaining the language in Section 19.(a) of the Uniform Law. Packages of fresh produce put up in a retail establishment are considered to be packages as long as a price is attached. If the exemption were eliminated, such packages instead of being marked, for example, "12/89 cents" would have to be marked "12 lemons/89 cents". It was argued that there could be a problem in deciding whether or not a commodity could "easily be identified" (such as might occur in an ethnic specialty grocery or with an exotic produce item). In researching the issue, the Committee has determined that Title 21, Section 101.100(b)(3) of the Code of Federal Regulations specifically exempts the food identity statement from having to appear "...if the common or usual name of the food is clearly revealed by

its appearance." Since no specific problems of enforcement were brought to the attention of the Committee concerning this issue, the Committee recommends no change to Section 19.(a) at this time. However, the Committee recommends that Sections 3.1. and 4. of the Uniform Packaging and Labeling Regulation be footnoted as follows:

¹Section 19.(a) of the Uniform Weights and Measures Law, and 21 CFR 101.100(b)(3) for non-meat and non-poultry foods, specifically exempt packages from identity statements if the identity of the commodity "can easily be identified through the wrapper or container."

**213-3 VC SECTIONS 6.7.1., 6.7.2., 6.8.1., 6.8.2.(c), 6.10.(d)/RANDOM
PACK LABEL TO THREE DECIMAL PLACES**

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

Sections 6.7.1. and 6.8.1. (PRESCRIBED UNITS) of the Uniform Packaging and Labeling Regulation provide exceptions that permit decimal fractions on random pack net weight declarations to be carried out to three decimal places. It was suggested that this language is out of place and belongs under Section 6.10. FRACTIONS. The Committee believes that the exceptions in Sections 6.7.1., 6.7.2., and 6.8.1. are correctly placed, but that the exceptions should be repeated in Section 6.8.2. and in Section 6.10. The Committee recommends Section 6.8.2.(c) be amended as follows:

- (c) weight of 1 kilogram or more; in kilograms and decimal fractions to not more than two places, except that the quantity declaration appearing on a random weight package may be expressed in terms of kilograms and decimal fractions carried out to not more than three decimal places.

The Committee recommends Section 6.10.(d) be amended as follows:

- (d) Decimal fractions: A decimal fraction shall not be carried out to more than two places except that the quantity declaration appearing on a random package may be carried out to not more than three decimal places.

213-4 VC SECTION 6.11.3. ROUNDING

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

Section 6.11.3. of the Uniform Packaging and Labeling Regulation requires that metric or inch-pound quantities be rounded down when converted to their equivalent inch-pound or metric quantities. For example, 1.759 feet should be rounded down to 1.75 feet. With regard to metric rounding, the Federal Trade Commission (FTC) and the Food and Drug Administration (FDA) recommend following "normal" rounding procedures. The FTC recommendations appear as "Staff Interpretations", not as a regulation. The FDA recommendations have not been finalized and may not go to rule making at all. Mr. Alan Whelihan, representing the Office of Metric Programs, U.S. Department of Commerce, made a presentation at the Interim Meetings requesting uniformity among State and Federal recommendations in this area.

There is an obvious lack of uniformity between the FDA and FTC on this issue. Mr. Howard Pippin, representing the FDA, explained that the primary declaration on packages under FDA authority is always considered to be the inch-pound declaration, even if it appears second on the net contents label or in parentheses. He explained to the Committee that the FDA recommendation for rounding means that the metric net contents declaration is always the one being rounded. Therefore, it could be argued that 17.6 oz could only be rounded to 499 g ($17.6 \text{ oz} \times 28.349523 \text{ g/oz} = 498.95 \text{ g}$) even if the metric quantity is selected by the packager to appear first. Mr. Earl Johnson, representing the FTC, reported that his agency's recommendations for the use of "normal rounding" makes no distinction between rounding the inch-pound or the metric declaration. The second declaration on the label is assumed to have been rounded. Using the earlier example, if 500 g appears first on the label, 17.6 oz is an acceptable declaration under FTC and NCWM rounding recommendations.

The rationale for the original recommendation in Section 6.11.3. of the Uniform Packaging and Labeling Regulation is to avoid any potential problem of a packager labeling in metric units and rounding up to inch-pound units. Since the equipment used by weights and measures officials does not always include metric weights, an official might use the inch-pound declaration against which to check package net contents declarations even if it appears second on the label or in parentheses. If the inch-pound declaration was the rounded value and has been rounded up, the packager is held to a higher labeled net contents than labeling the rounded-down figure.

The Committee also discussed this issue with members of the Industry Committee on Packaging and Labeling and they agreed that the NCWM recommendation on rounding has merit and should be retained. **The Committee recommends no change to Section 6.11.3. at this time.**

213-5 SECTION 10.3./AEROSOL PAINTS

(This is an information item)

Mr. Patrick Hurd, representing the National Paint and Coatings Association, Inc., discussed with the Committee the association's desire to permit aerosol paints to be labeled by fluid volume as well as net weight. As a result of these discussions, the association is withdrawing its request at this time pending further data and information to be supplied to the Committee on this issue.

213-6 VC SECTION 11.23.(b) / TINT BASE PAINT

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

Section 11.23.(b) of the Uniform Packaging and Labeling Regulation currently permits tint base paints (paints to which colorant must be added prior to sale) to be labeled in terms of the volume (a quart or gallon) that will be delivered to the purchaser after addition of the colorant only if three conditions are met:

1. "the system employed ensures that the purchaser always obtains a quart or a gallon,"
2. "a statement indicating that the tint base paint is not to be sold without the addition of colorant is presented on the principal display panel,"
3. "the contents of the container, before the addition of colorant, is stated in fluid ounces elsewhere on the label."

The National Paint and Coatings Association, Inc., proposes the elimination of the third requirement listed above, since tint base paints are not to be sold without the addition of colorant and paint manufacturers guarantee that the quantity of final paint product is as stated on the label (e.g. one gallon). Most paint manufacturers have numerous tint base formulations requiring different labels for each tint base. By removing the requirement for declaring the amount of tint base without colorant, manufacturers will be able to substantially reduce the number of labels necessary for their tint bases.

The Committee members believe that the requirement for labeling the contents of the container before colorant should remain because:

1. paint manufacturers cannot completely guarantee that the paint will not be sold without the addition of colorant, and
2. weights and measures enforcement officials could not test containers of tint-base paint until after colorant was added if the net contents declaration before colorant addition were eliminated.

Therefore, the Committee recommends no change to this section.

UNIFORM REGULATION FOR THE METHOD OF SALE OF COMMODITIES

**214-1 VC SECTION 1.3. BUTTER, OLEOMARGARINE, MARGARINE,
BUTTER-LIKE AND/OR MARGARINE-LIKE SPREADS**

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

At the 70th Annual Meeting, 1985, Section 1.3. of the Uniform Regulation for the Method of Sale of Commodities was revised to include "margarine-like spreads". "Margarine-like spreads" are defined as those

products that meet the Federal Standard of Identity for margarine and oleomargarine except that they contain less than 80 percent fat.

The National Association of Margarine Manufacturers has proposed amending this section further by adding a 24-ounce package size in order to permit the sale of a very popular size of spread package. The Committee is prepared to add this package size to the list of permitted sizes. The American Butter Institute is not opposed to this addition.

Also, both trade associations brought to the attention of the Committee the different types of products on the market used as margarine and butter substitutes. "Dairy spread" and "butter blend" (the latter composed of 10% butter and 75% total fat) were two combinations that were discussed. The Committee recommends language that will broaden the type of product covered by Section 1.3. **The proposed revision is as follows:**

1.3. BUTTER, OLEOMARGARINE, MARGARINE, AND BUTTER-LIKE AND/OR 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, 1 1/2 pounds, or a multiple of 1 pound.

(b) Metric Weights - 125 grams, 250 grams, 500 grams, 750 grams, or a multiple of 500 grams.

Butter-like and/or margarine-like spreads are those products that meet the Federal Standard of Identity for butter or margarine and oleomargarine except that they contain less than 80 percent fat and may contain other safe and suitable ingredients.

214-2 VC PROPOSED SECTION 1.5.3. CLAMS, MUSSELS, AND OYSTERS

(This item was carried over from the 70th Annual Meeting, 1985, in which it was item 205-2(b).)

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

In 1983, the Committee recommended guidelines for the method of sale of clams, mussels, and oysters. At the Interim Meeting for the 70th Annual Meeting, 1985, the Committee began work on a section to be added to the Uniform Regulation for the Method of Sale of Commodities concerning the proper methods of sale for clams, mussels, and oysters. Preliminary studies by West Virginia Weights and Measures in 1983 reported finding free liquid as high as 60% by weight in samples taken. Virginia Weights and Measures reported the amount of free liquid varying from 5 to 38% at retail. Data collected recently by Maryland, Connecticut, and Illinois confirm these findings.

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At the July 1985 Annual Meeting, representatives from trade associations, individual businesses, and the National Marine Fisheries Service recommended delaying action because of their need to study whether all segments of business could meet the proposed 15% free liquid maximum for fresh oysters. There appeared to be no controversy with any other part of the recommended method of sale. The Committee agreed to carry over the proposal until this year.

At the 1986 Interim Meetings, the Shellfish Institute of North America (SINA) informed the Committee about a study being funded by the National Marine Fisheries Service, U.S. Department of Commerce. The study will take one year to collect the data but had not yet been started at the time of the Interim Meetings. Details on the SINA study were not provided to the Committee so that it could decide whether or not the data to be collected would be useful to the Conference. For example, the SINA spokesman was not able to indicate whether information on the procedures used in manufacturing and processing would be collected, or whether there would be a study of the amount of weep or free liquid that would develop depending on the type of manufacturing practices that were followed. The Committee was not able to find out if the study would follow the product through distribution channels or would simulate distribution time under ideal storage conditions.

SINA again requested a delay in proposing a maximum free liquid amount for fresh oysters until next year. No data were submitted by any group to indicate that a 15% free liquid maximum could not be met. Ms. R. Creitz, representing the National Marine Fisheries Service, U.S. Department of Commerce, provided, among other material, a copy of a study by staff of the Florida Department of Agriculture and Consumer Services that substantiates the need to follow the draining criteria in the Code of Federal Regulations to exclude wash water from packaged oysters and, furthermore, substantiates the need for the existing Florida restriction of free liquid to a maximum of 15%. The Interstate Shellfish Sanitation Conference also is on record as agreeing with the recommended 15% free liquid maximum.

The Committee is persuaded that a serious problem exists in the method of sale of fresh oysters by fluid volume. Last year, some industry representatives recommended an alternative method of sale for fresh oysters out of the shell, that is, by drained weight. However, the Committee is unaware of any packager labeling the product this way. In order to permit value comparison and permit a long standing trade custom of labeling oysters by fluid volume, the Committee has decided to recommend fluid volume as the only permitted labeled quantity, and to recommend imposing a maximum amount of free liquid for fresh oysters, clams, and mussels sold by fluid volume.

Data from investigations by Maryland Weights and Measures indicates that measuring the amount of free liquid as a percent by weight will give almost the same results as measuring free liquid as a percent by volume. The official method of the Association of Official Analytical Chemists is a percent by weight test. Changing to weight would simplify the field test procedure. Maryland officials note that this is an easier measurement to make but does not eliminate having to open all the packages in a sample. (See proposed Section 1.5.3.3. below).

The Committee proposes the following method of sale amendment to Section 1.5.:

- 1.5. MEAT, POULTRY, FISH, AND SEAFOOD.— Shall be sold by weight, except that shellfish not included under Section 1.5.3., may be sold by weight, measure, and/or count.

In addition, the Committee proposes the following new section be added:

1.5.3. CLAMS, MUSSELS, AND OYSTERS

- 1.5.3.1. Processed clams, mussels, or oysters on the half shell (fresh or frozen) shall be sold by net weight excluding the weight of the shell.
- 1.5.3.2. Canned (heat-processed) mussels, clams, or oysters shall be sold by net weight. A maximum of 41 percent free liquid by weight is permitted for canned oysters.
- 1.5.3.3. Fresh oysters, clams, or mussels removed from the shell and placed in a container shall be sold by fluid volume. A maximum of 15 percent free liquid by weight is permitted.
- 1.5.3.4. Whole clams, oysters, or mussels in the shell (fresh or frozen) shall be sold by weight (including the weight of the shell, but not including the liquid or ice packed with them), dry measure (e.g., bushel), and/or count. In addition, size designations may be provided.

214-3 VC SECTION 1.7.1. ICE CREAM/REFERENCE TO HANDBOOK 44

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

Section 4.45. MEASURE-CONTAINERS in Handbook 44 applies to controlling the sizes of the prepackaged measure-containers used to determine the quantity of ice cream, ice milk, or sherbet. A reference to this section should be added to Section 1.7.1. of the Uniform Regulation for the Method of Sale of Commodities. A footnote to Section 1.7.1. is proposed as follows:

¹For prepackaged measure-containers, intended to be used only once, to determine in advance of sale the quantity of a commodity such as ice cream, ice milk, or sherbet on the basis of liquid measure, the size restrictions noted in Section 4.45. MEASURE-CONTAINERS of National Bureau of Standards Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices" apply. Handbook 44 requires capacities of such measure-containers to be a multiple of or a binary submultiple of a quart or liter, except that any capacity less than 1/2 liquid pint or 1/4 liter is permitted.

**214-4 V PROPOSED SECTION 1.7.2. ICE CREAM AND FROZEN
DESSERT NOVELTIES**

(A) METHOD OF SALE

(This item was defeated. See the end of the item for a discussion of the proposed amendment and the voting on the amendment and the item as proposed by the Committee.)

Products known as frozen dessert novelties 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") or are labeled by total fluid volume. 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.

A long-standing consumer usage and trade custom of selling ice cream by fluid volume exists. 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 dessert novelties, questions arise regarding (1) proper labeling of the "other" ingredients, and (2) how to test such products for compliance. Many weights and measures officials are concerned about permitting the cookie portion of a frozen novelty to be labeled by volume. Many officials would like to see a net weight rather than fluid volume declaration on such packages.

At the 70th Annual Meeting, July 1985, the Committee proposed a total fluid volume method of sale and test procedure (see item 205-4 in the Annual Report). It was defeated. Subsequently, the Western and Southern Weights and Measures Associations proposed that the Committee address this issue again, and in addition recommended total volume as the method of sale. The Central Weights and Measures Association recommended requiring net weight, volume, and count. The Northeastern Weights and Measures Association recommended net weight.

At the 1986 Interim Meetings, the Committee reviewed and discussed a very small amount of data that had been collected by an individual ice cream novelty manufacturer. These data, although not conclusive, indicated a smaller variation in weight than in volume among individual packages in the same lot and between lots.

The Committee also reviewed a film prepared and provided by California Weights and Measures showing its version of a total fluid volume test. The Committee judged this particular test method not suitable for field testing use. Test equipment, loaned by the Eskimo Pie Company, of a design simpler than California's, was used to test sample packages during the Committee's meeting. One type of ice cream novelty, a chocolate-chip-cookie sandwich, absorbed the test fluid. It was still to be determined (as of January 1986) whether a suitable test fluid could be found that would not be absorbed by some cookies.

The Committee believes that there is a need to standardize the method of sale of these commodities. There are significant shortcomings with a method of sale by volume including the potential absorption of test fluid by some cookies, and no acceptable total volume test method for all ice cream sandwiches. A volume displacement test requires careful application of a sensitive technique. Some regulatory officials are convinced that the test, unless run in a laboratory, will not stand up in litigation. (There is some precedent in requiring net weight declarations when other declarations cannot be enforced (for example, aerosol packages must be labeled by net weight)).

The International Association of Ice Cream Manufacturers estimates that it would cost \$600 million to convert the industry to packaging by weight through the purchase of checkweighers. The Committee does not believe that an investment in checkweighers is required in going to a net weight declaration. The small amount of preliminary data that the Committee reviewed during the Interim Meetings indicates that frozen dessert novelties packagers may not always be meeting the volume declarations. This may be due to the difficulty in checking the product. Additional data were collected by Committee members before the 71st Annual Meeting to further compare net weight vs. volume declarations. Of 38 lots of product, 19 lots failed to comply with their net volume declarations. A majority of Committee members concluded that a significant problem exists with packages not complying with their volume declarations, and that a net weight declaration would better inform the consumer.

The Committee believes that the term "ice cream novelties" proposed in last year's report can be included in the definition of "frozen dessert novelties". The Committee recommends further clarifications of last year's report that frozen dessert novelties are those containing less than 8 fluid ounces and that these products are prepackaged. Further, the Committee recommends that the industry be given a one-year period to change from volume to net weight labeling. **The Committee recommends the following new section be added to the Uniform Regulation for the Method of Sale of Commodities:**

1.7.2. FROZEN DESSERT NOVELTIES.

1.7.2.1. DEFINITION.— Frozen dessert novelties are individual-serving-sized frozen food treats of less than 8 fluid ounces and include bars on a stick or stickless, sandwiches, cups, cones, sundaes, or pops, consisting in whole or in part of ice cream, ice milk, sherbet, ice, frozen pudding, frozen yogurt, frozen juice or other frozen dessert.

1.7.2.2. DECLARATION OF QUANTITY.— Frozen dessert novelties, packaged in advance of sale, shall be kept, offered, exposed for sale, or sold by net weight. This requirement shall take effect on January 1, 1988.

A motion to amend this item by substituting "total volume" for "net weight" was made. The vote to hear the amendment passed. (House of State Representatives yes 31, no 0; House of Delegates yes 31, no 21.) The vote on the amendment itself, failed. The Conference then voted on the original proposal (to require net weight); that failed. A proposal from the floor to postpone this item indefinitely was then made. The Parliamentarian explained that, if this motion carried, the Committee could not raise this issue again without a vote of the membership. This motion failed (House of State Representatives yes 7 no 29; House of Delegates yes 5, no 59).

Since both the original Committee proposal and the amendments failed, the methods of sale of these products will continue to be those currently practiced by the packaging industry, that is, to either (1) label the novelty by total fluid volume or (2) label the ice-cream or ice-cream-like portion of the frozen dessert by fluid volume, augmented by a variety of declarations for other foods combined with the ice-cream portion.

(B) TEST METHOD

The Committee saw merit in presenting the following item for a vote, even though Item 214-4(A) failed; the original reasons for Item B as an interim procedure gained in importance because the practice of volume declaration will continue.

(This item was adopted.)

The Committee explained, prior to its presentation of Item 214-4(A) and (B) for a vote, that an official volume test method was needed to test frozen dessert novelties. Although the Committee proposed a net weight method of sale, an interim period of 18 months was also proposed for packagers to convert from volume to weight. During this interim period, a test method for volume would have been needed.

The Committee proposes the addition of a volume-displacement test method to NBS Handbook 133. The provisions of the method of test are: (1) the product shall be maintained at 0 °F or below, and (2) ice water at 33 °F or below may be used as a displacement fluid.

The International Association of Ice Cream Manufacturers reported at the Annual Meeting that this set of conditions permits the testing of frozen novelty products without the absorption of test fluid. A thin film of ice forms around the product when kept at 0 °F, preventing its melting in the ice water. Ice water as the displacement fluid is a safer and environmentally less caustic fluid than kerosene¹.

¹See the Official Methods of Analysis of the Association of Official Analytical Chemists, 11th Edition, 16.220-16.221. This method is now a "surplus method", but is still used in industry and state government laboratories.

214-5 VC

SECTION 2.19. GASOLINE-ALCOHOL BLENDS

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

At the 69th and 70th Annual Meetings (1984 and 1985), the Conference adopted and modified a section in the Uniform Regulation for the Method of Sale of Commodities on the sale of gasoline-alcohol blends. It establishes requirements for informing consumers and retailers of the presence of alcohol in the gasoline, and explains where this information is to be displayed on the motor fuel dispenser.

The American Petroleum Institute requested specific wording in Section 2.19.1. that would clarify that the labeling requirement is a minimum standard and would not prohibit posting of additional alcohol or additive information.

The Committee concludes that no change is needed in the recommended regulation specifying that other voluntary labeling is permitted. In its 1984 Committee Report, the Committee's recommendation did "not preclude additional voluntary labeling information and consumer education efforts as to percentage amounts, meeting ASTM standards, etc". In its 1985 Report, the Committee encouraged "declaration of the maximum amount of ethanol, methanol, or combination...either voluntarily by gasoline marketers or by regulation in those...states that have the capability to enforce such requirements". However, the Committee has and continues to recommend minimum dispenser labeling requirements.

The requirement for this information to be printed in letters one-half the size of the product identity could create a space problem on a dispenser with a product identity appearing in very large print. This and other editorial changes are proposed to Section 2.19. as follows:

2.19.1. 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 upper fifty percent of the dispenser front panel in a position clear and conspicuous from the driver's position, in a type at least 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) in contrasting colors.

2.19.2. DOCUMENTATION FOR PUMP DISPENSER 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 dispenser labeling purposes; it is the responsibility of any potential blender to determine the total oxygen content of the motor fuel before blending.

214-6 V PROPOSED SECTION 2.20. LIQUEFIED PETROLEUM GAS

(This item was adopted)

At the 70th Annual Meeting, 1985, the Committee expressed its intention to recommend a new section be added to the Uniform Regulation for the Method of Sale of Commodities Regulation that would require LP gas to be sold on a temperature compensated basis. Several recommendations were made through the regional weights and measures associations that strengthened and clarified the Committee's original proposal.

The Committee met with the Specifications and Tolerances Committee as well as industry representatives during the 1986 Interim Meetings to discuss this issue. The National LP-Gas Association agreed that an exemption should be applied either to small deliveries or to meters with a rated capacity of 20 gallons per minute or less. The Committee prefers exempting a type of device rather than a size of delivery in order to achieve uniformity with what is being proposed by the Specifications and Tolerances Committee. (See Item 332-1.)

Additional modifications to the Committee's proposal have been made to reflect the method of sale for vapor as well as for liquid product. In this regard, the definition for the standard cubic foot of vapor (equivalent to temperature and altitude compensation for LPG liquid), taken from Section 3.33. LPG VAPOR-MEASURING DEVICES of NBS Handbook 44, was initially proposed. However, at the Annual Meeting, industry representatives indicated that atmospheric pressure corrections are not applied in every state. Therefore, the Committee recommends a "metered cubic foot" corrected to 60 °F for vapor. The purpose of the Committee recommendation is to move ahead with temperature compensation requirements while providing industry an opportunity to make recommendations concerning requirements for atmospheric pressure corrections.

In addition, it should be pointed out that the Committee is strongly committed to automatic temperature compensation rather than compensation by invoice. **The proposed new section is:**

- 2.20. LIQUEFIED PETROLEUM GAS.** - All liquefied petroleum gases, including but not limited to propane, butane, and mixtures thereof, shall be kept, offered, exposed for sale, or sold by the pound, metered cubic foot¹ of vapor (defined as one cubic foot at 60 °F) or the gallon (defined as 231 cubic inches at 60 °F). All metered sales by the gallon, except those using meters with a maximum rated capacity of 20 gallons per minute or less, shall be accomplished by use of a meter and device that automatically compensates for temperature.

¹Sources: American National Standards Institute, Inc., "American National Standard for Gas Displacement Meters (500 Cubic Feet per Hour Capacity and Under)", First Edition, 1974, and National Bureau of Standards Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices".

HANDBOOK 133

230-1 TABLES 2-8 AND 2-9 MAV'S FOR AN INDIVIDUAL PACKAGE
LABELED BY WEIGHT OR VOLUME

(This is an information item)

The State of New York recommended that the MAV's for packages labeled by weight or volume be made smaller. They proposed that new tables of MAV's be adopted that range from 1% of the labeled weight or volume for large packages (greater than 30 lb or 300 fl oz) down to 10% for small packages (less than 0.10 lb or 1 fl oz) with a smooth curve fit in between these values. Lower MAV's were proposed for the mid-range of package sizes. No package data were provided to support this proposal.

The current MAV's were developed to define the limits of "reasonable variation" in the Weights and Measures Law and were derived from actual data collected at retail and packaging locations. Data on several thousand different packaged products were used to determine the MAV's in Handbook 133. Following discussion with the Subcommittee on Commodity Standards, the Committee concluded that any proposal to modify the MAV's meets the following criteria:

1. The MAV's must be evaluated within the context of the average requirement and the sampling plans they are intended to be used with. The proposed MAV's must be compatible with the sampling plans of Handbook 133. They cannot, for example, be compared directly with the smaller "unreasonable minus errors" of Handbook 67. The Handbook 67 sampling plan permitted one unreasonable minus error in a sample of 10 before the lot was judged out of compliance; Handbook 133 (Category B) permits no MAV's in a sample of 10.
2. The data supporting recommendations for changing the MAV's must:
 - (a) Be based on package data that also meet the average requirement, and
 - (b) Include hard-to-pack as well as easy-to-pack packages, and standard pack as well as random pack.

Certain jurisdictions indicated they needed tighter (smaller) MAV's because they do not use the average requirement in their package checking programs. The Conference has long been on record as urging the use of the average requirement as the basis for package net contents compliance. The use of MAV's independently of any sampling plan as an compliance tool is not recognized by the Conference.

230-2 VC BORAX

This item was carried over from the 70th Annual Meeting, 1985, in which it was Item 205-8.

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

At the 70th Annual Meeting, the Committee planned to recommend a new section to the Uniform Regulation for the Method of Sale of Commodities to permit consumer products composed predominantly of borax to be sold by volume. In July 1985, the Federal Trade Commission indicated it could not support the Committee's recommendation for the labeling of borax by volume. The Committee met again to resolve this issue.

Consumer products consisting predominantly of borax are presently labeled by weight. Many questions about these products and how to resolve the moisture loss problem associated with them were explored. U.S. Borax's laundry products, "Borateem" bleach and "20 Mule Team Borax", are examples of consumer products composed primarily of "10 mole borax". The "10 mole" refers to the amount of water naturally occurring in the borax molecular structure. It can dehydrate naturally losing over 23% by weight. If the company produced the dehydrated product artificially, the final product would not dissolve properly in the laundry. Packaging borax in impermeable packaging materials produces a caked product unsuitable for consumer use.

Borax shows no decrease in volume due to moisture loss even after shipment.

A volumetric test procedure has been prepared to distinguish between short weight due to moisture loss or short filling at the point of pack. The primary declaration will still be weight, but U.S. Borax has agreed to put a volume declaration on the package side or back panel as a supplemental declaration.

U.S. Borax has only two plants packaging their consumer borax products, one located in Los Angeles County, California, and the other in Burlington, Iowa. The company is willing to open its doors and records to weights and measures officials to prove that they are delivering at or above the label declaration. They would welcome in-plant tests and evaluation of their records on a routine or complaint basis. Weights and measures agencies for Los Angeles and Iowa are both willing to cooperate in establishing a standard operating procedure for in-plant inspections and reporting to other jurisdictions.

The Committee recommends that the following test method be added to Handbook 133:

3.16. BORAX

This section describes a method for testing packaged commodities in powdered or granular form consisting predominantly (more than 50 percent) of borax.

Such commodities are labeled by weight, but borax can lose more than 23 percent of its weight due to moisture loss. However, it does not lose volume upon moisture loss, and this property makes possible a method of testing based on volume. The method may be used either as a means of verifying that the purchaser is receiving at least a declared minimum volume of commodity or, as a means of audit testing, to identify possible short-filling by weight at point of pack. Since the bulk density of these commodities can vary at point of pack, further investigation would be required to determine whether such short filling had occurred.

3.16.1. Equipment

- o Equal-arm scale or balance having a sensitivity of 0.002 lb.
- o Metal density cup having a capacity of 1 dry pint (550.6 mL) (such as O'Haus #104)¹, with the dimensions shown in Figure 3-13.
- o Metal density funnel with slide-gate and stand (such as Cox #29)¹, with the dimensions shown in Figure 3-13.
(Density cup and funnel available from Seedburo Equipment Co., Chicago.¹)
- o Rigid straightedge or ruler.
- o Pan (metal or plastic) suitable for containment of overflow of density cup.

3.16.2. Procedure

1. Follow the steps described in Section 3.6. If the lot does not comply by weight with the sampling plan requirements (either the average or individual package requirements), select the lightest package (noting the actual net weight for this package) and continue.
2. Determine the tare weight of the density cup.
3. Place the density cup in the pan, and the funnel on top of the density cup. Close the funnel slide-gate.

¹The use of trade or brand names does not imply that they are endorsed or recommended by the Department of Commerce over similar products commercially available from other manufacturers.

4. Pour sufficient commodity into the funnel so that the density cup can be filled to overflowing.
5. Quickly remove the slide-gate from the funnel, allowing the commodity to flow into the density cup.
6. Carefully, without agitation of the density cup, remove the funnel and level off the commodity with the ruler or straight edge. Hold the ruler or straightedge at right angles to the rim of the cup, and draw it back carefully so as to leave an even surface.
7. Weigh the filled density cup (in pounds). Subtract the tare weight of the cup from the gross weight of the commodity plus cup to obtain the net weight of commodity in the cup.

3.16.3. Determination of Volume

1. Multiply the actual net weight (in pounds) as found for the package under test (step 1 in Section 3.16.2.) by 550.6.
2. Divide the answer obtained above by the weight of the commodity in the density cup (step 7 in Section 3.16.2.) The result is the net volume of commodity in the package in mL.
3. Compare the net volume of commodity in the package with the volume declared on the package. The volume declaration will be found at a location other than the principal display panel. It will be in the following form (1 mL = 1 cc):

Vol. ____cc per NBS Handbook 133, Sec. 3.16.

3.16.4. Action

If the net volume of commodity in the lightest package is less than the declared volume on the package, the lot is out of compliance and enforcement action should be taken.

If the net volume of commodity in the lightest package equals or exceeds the declared volume on the package, the official may treat the lot as being in compliance on the basis of volume and take no further action. Alternatively, the official may take further steps to determine whether the lot was in compliance with net weight requirements at point of pack or was shortfilled by weight. To determine this, the official could do one or more of the following:

1. Perform a laboratory moisture loss analysis¹ that will ascertain what the weight of the original borax product was when it was fully hydrated.
2. Obtain additional data at the packing plant.
3. Investigate the problem on the lot in question with the packager of the commodity.

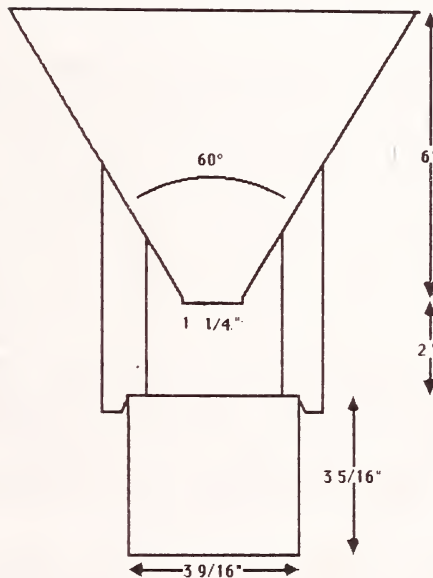


Figure 3-13. Density cup and funnel.

¹Procedure available upon request from the Office of Weights and Measures, National Bureau of Standards.

230-3 FTC POLICY REGARDING H-133

(This is an information item)

The Federal Trade Commission has issued a notice in the Federal Register announcing that the procedures in H-133 "are not in conflict with existing Federal Trade Commission requirements." Weights and measures officials should have confidence that these sampling and test methods are endorsed by their Federal counterparts (see also the work of the Task Force on Commodity Requirements) and can be used with full assurance that there will be no question about the integrity of a determination as to package net contents compliance. See Appendix B for the FTC notice of policy.

OTHER ITEMS

250-1 ENERGY ALLOCATION SYSTEMS

(This is an information item)

The Laws and Regulations Committee discussed the issue as it was described to it by Seattle Weights and Measures through the Western Weights and Measures Association.

Property managers of buildings shared by several renters, leasers, etc., that do not have individual metering systems for heating or cooling, sometimes allocate energy costs among the several residents. There are many ways used to allocate these energy costs. The simplest method is to allocate costs proportional to the square footage leased by each tenant. Other methods use various combinations of time, temperature, Btu measurements, number of occupants, and other space allocation "systems". When measurements of the energy use or consumption take place after (downstream from) the meter supplied by the utility company, some would argue that these measurements fall within the scope of State and local weights and measures regulation.

It may be that basic standards of fairness need to be established under existing landlord-tenant laws that: (1) clearly define minimum billing requirements covering shared space energy use vs individual apartment heating; (2) provide that all tenants pay for energy use on the same basis; (3) use time-based systems verifying that heat is actually being delivered; and, (4) provide some kind of notification system to report problems of getting heat when the equipment is malfunctioning.

Mr. J. Zimmer, inventor of one allocation system, described his firm's approach to the technical and legal issues. He said that most public utilities contacted by his firm do not consider these devices or systems to be under regulation by utilities commissions. The final subdivision of costs using his system is derived from a complex equation combining square footage, number of occupants, amount of shared building space and equipment, and time and temperature at valve openings or at a thermostat. Accuracy of those elements amenable to measurement (e.g. time, temperature) may affect the final allocated bill slightly or considerably, depending on how the equation for "fair allocation", or the billing system, is set up.

For lack of hard data, the Committee is not able to arrive at a conclusions at this time. The Committee refers the issue back to the Western Weights and Measures Association.

250-2 TASK FORCE ON COMMODITY REQUIREMENTS

(This is an information item)

The Committee met jointly with the Executive Committee to review and discuss the work and progress of the Task Force on Commodity Requirements. See Appendices B and C in the Executive Committee Report. The "gray area" approach proposed by the Task Force shows promise of clarifying the moisture loss issue through administrative means. Cooperative information and data exchange among USDA Meat and Poultry Inspection, weights and measures jurisdictions, and industry may help to weed out problems that are not (but are often claimed to be) moisture loss in manufacturing and distribution.

250-3 POLYETHYLENE

(This is an information item)

There continues to be a problem with the net contents declarations on polyethylene sheeting. Several packagers have been found labeling the length and width of the sheeting correctly but labeling the mil thickness as thicker than the sheeting actually is. They have been covering up this deception by labeling a net weight which is only correct for a much thinner product. If a weights and measures official tests the product by net weight without checking to see whether the stated mil thickness could result in the stated net weight, then he will never suspect that the product is actually short measure. (For example, a 10 ft by 100 ft by 4 mil sheet should weigh 19.1 pounds; packages have been found labeled 17.1 pounds.)

The Committee recommends that the official make sure that all the labeled net contents statements of polyethylene sheeting are consistent with one another. To determine the proper net weight, the inspector may: (1) calculate what the net weight should be for any declared length, width, and thickness (See Uniform Regulation for the Method of Sale of Commodities, Section 2.12.7. and use 0.92 for "D" for clear poly and 0.93 for black poly); or, (2) consult a table (to be mailed to all State and major local weights and measures directors) for what the net weight should be. Enforcement action can be taken if all the labeled contents are not consistent. The official does not need to make any mil thickness measurements on the sheeting.

D. Stagg, Alabama, Chairman

T. Brink, Vermont
S. Colbrook, Illinois
L. Letey, Colorado
A. Nelson, Connecticut

C. S. Brickenkamp, NBS, Technical Advisor

COMMITTEE ON LAWS AND REGULATIONS

APPENDIX A



S. MASON CARBAUGH
COMMISSIONER

RAYMOND D. VAUGHAN
DEPUTY COMMISSIONER

COMMONWEALTH of VIRGINIA

DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

P. O. Box 1163, Richmond, Virginia 23209

December 2, 1985

Dr. George E. Mattimoe, Chairman
National Conference on Weights and Measures
Post Office Box 22159
Honolulu, Hawaii 96822

Dear Dr. Mattimoe:

This Department has recently been discussing with the Retail Food Industry the correct method of merchandising wrapped bulk commodities. These commodities, which generally consist of wrapped candies, pet food portions, snack bars, and condensed flavored (bullion cubes), are being sold gross weight. While individual wrappers may be insignificant, collectively the wrappers (tare weight) may equal or exceed six percent per one pound.

Several suggestions to the food industry as how to take proper tare on wrapped bulk foods include:

- 1) manually setting the scale for the tare weight;
- 2) through a look up code at the cash register;
- 3) automatic through the computer check out system;
- 4) a percentage tare; and
- 5) develop tare charts for each commodity to the nearest 0.01 lb. by 1/4 lb. weight intervals.

I am told the difficulty in taking proper tare on wrapped commodities lies with automatic checkout equipment systems, as well as the human factor. The problem is compounded since all scales are not made in 1/4, 1/2, or 1 pound increments.

Mr. Lyles, Chief of our Weights and Measures Bureau, said that you were present when this item was discussed at the Southern Weights and Measures Association meeting in New Orleans, Louisiana, during November 4-6, 1985.

APPENDIX A

Dr. George E. Mattimoe
Page two
December 2, 1985

Due to the problems associated with merchandising wrapped bulk commodities, I am requesting that you as Chairman of the National Conference on Weights and Measures (NCWM) appoint a task force consisting of scale, cash register, computer manufacturers or vendors, and Weights and Measures Officials to recommend equitable procedures for industry to follow to insure that Weights and Measures Net Weight Laws are complied within the sale of wrapped bulk commodities.

I hope recommendations and resolution of the issue can be presented at the next National Conference on Weights and Measures.

I hope this request receives your favorable consideration. Let me know if you have questions, or if I can be of assistance.

Sincerely,

Original signed by
S. M. Carbaugh
S. Mason Carbaugh
Commissioner

cc: Mr. Albert D. Tholen
Mr. Barry F. Scher
Mr. Billy W. Southall
Mr. James F. Lyles
SWMA Commissioners of Agriculture

Laws and Regulations Committee

APPENDIX A

January 8, 1986

Honorable S. Mason Carbaugh
Commissioner, Department of
Agriculture and Consumer Services
P.O. Box 1163
Richmond, Virginia 23209

Dear Mr. Carbaugh:

Thank you for your letter of December 2, 1985 concerning the method of sale of wrapped commodities being sold from bulk.

I am well aware that retail food stores have sometimes overlooked their legal responsibility in this area, selling prepackaged commodities such as candies, pet food, etc. on a gross weight rather than a net weight basis. You cite instances in which the wrappers may constitute as much as six percent of the gross weight. In fact, tare weights amounting to 48 percent of the gross weight have been measured (e.g., candy cigarettes in boxes).

The National Conference on Weights and Measures (NCWM) recommends, and every State, to my knowledge, has adopted requirements as expressed in Section 1.2. of the Uniform Weights and Measures Law (and published in National Bureau of Standards Handbook 130, "Uniform Laws and Regulations"). This section reads in part: "The term 'weight' as used in connection with any commodity means net weight...." Retail food stores routinely comply with this requirement in their meat packaging operations. Because marketing practices in bulk food sales have evolved from the sale of unwrapped commodities to wrapped, the retailers have not adequately prepared themselves by purchasing suitable measuring and calculating equipment to permit easy or automatic computing of the tare weights for variable weight sales of prepackaged commodities.

Therefore, in my opinion, the problem is not weights and measures laws and regulations requiring sales by net weight, but it is retail sales agents having trouble finding ways to comply with the law. The alternatives may include all those your letter mentions plus one: not to sell such prewrapped goods from bulk because the retail store does not have automatic or simple means to account for the tare weight.

APPENDIX A

However, I think your letter highlights the need to bring the retail food marketers and equipment manufacturers together on this subject. The NCWM can sponsor such a meeting later this year. I think all weights and measures officials would be adamantly opposed to changing law or policy requiring net weight. I think a meeting of retailers and equipment manufacturers could begin by explaining the law to them and asking them to work out what they each can do to comply. If this approach is acceptable to you, the National Bureau of Standards Office of Weights and Measures will begin making plans to arrange such a meeting.

Sincerely,

George E. Mattimoe, Chairman
National Conference on Weights and Measures

FEDERAL TRADE COMMISSION

Policy Regarding Checking The Net Contents of Packaged Goods

AGENCY: Federal Trade Commission.

ACTION: Notice of policy.

SUMMARY: This notice announces the Federal Trade Commission's determination that the procedures for checking the net contents of packaged goods contained in the National Bureau of Standards Handbook 133, Second Edition issued October 1984 are not in conflict with existing Federal Trade Commission requirements.

FOR FURTHER INFORMATION CONTACT: Earl Johnson, Federal Trade Commission, 6th and Pennsylvania Avenue NW., Washington, DC. 20580. Telephone: (202) 376-2891.

SUPPLEMENTARY INFORMATION: The second edition of NBS Handbook 133 was published in October 1984. The National Bureau of Standards stated that this handbook had been prepared as a procedural guide for compliance testing of the net contents statement on packaged goods. Compliance testing of packaged goods is the process for determining whether the actual contents of a package, as affected by the packaging and distribution process, sufficiently conform with the statement of net contents on the package.

The National Bureau of Standards further stated that although the handbook has been developed primarily for use by weights and measures officials of the states, counties and cities, it could also be useful to commercial and industrial establishments involved in the packaging, distribution, and sale of commodities. The Federal Trade Commission wishes to enhance the utility of this handbook by this notice stating that the procedures in NBS Handbook 133, Second Edition are not in conflict with existing Federal Trade Commission requirements.

By direction of the Commission.

Emily H. Rock,

Secretary.

[FR Doc. 86-6445 Filed 3-24-86; 8:45 am]

BILLING CODE 6750-01-M

REPORT OF THE COMMITTEE ON SPECIFICATIONS AND TOLERANCES

Fred Gerk, Chairman
Director, Division of Standards and Consumer Services
State of New Mexico

REFERENCE KEY NO.

300 INTRODUCTION

The Committee on Specifications and Tolerances submitted its Report to the 71st Annual Meeting of the National Conference on Weights and Measures. The Report consisted of the Interim Report as offered in the "NCWM Program and Committee Reports" as amended by Addendum Sheets issued during the Annual Meeting, and further amended from the floor during the voting session.

Items are grouped into the following series for ease of reference:

Sec. 1.14. General	314 Series
Sec. 2.20. Scales	320 Series
Sec. 2.21. Belt-Conveyor Scale Systems	321 Series
Sec. 2.22. Automatic Bulk Weighing Systems for Grain	322 Series
Sec. 3.30. Liquid-Measuring Devices	330 Series
Sec. 3.31. Vehicle-Tank Meters	331 Series
Sec. 3.32. LPG-LMD	332 Series
Sec. 3.33. LPG-VMD	333 Series
Sec. 3.34. Cryogenic Liquid-Measuring Devices	334 Series
Sec. 5.54. Taximeters	354 Series
Sec. 5.55. Timing Devices	355 Series
Sec. 5.56. Grain Moisture Meters	356 Series
Other Items	360 Series

Table A identifies all of the items contained in the Report by Reference Key Number, Item Title, and Page Number.

Voting items are identified in **bold face print** as well as by a suffix "V" (i.e., 320-4 V) or, if the voting item was a part of the consent calendar, by a suffix "VC". Withdrawn items are identified by a suffix "W". Items without a suffix are informational.

In addition the Report contains an appendix related to Reference Key 320-22.

Throughout the Report, recommended amendments to existing paragraphs of NCWM and NBS publications are shown as follows: wording to be deleted is shown ~~lined through~~; wording to be added is underlined. New paragraphs added are not underlined. All sections to be changed or added are indented and printed in **bold face type**.

ORDER OF PRESENTATION

Prior to the submission of the Report and its component items for consideration, two items were withdrawn: 330-2 and 360-1.

The Committee's final report was presented in the following order:

Consent Calendar; and

Individual Voting Items.

Table B summarizes the voting results for items voted on individually. Following Table B, each item is described in detail in numerical sequence of the Reference Key Number.

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REFERENCE KEY ITEMS AND INDEX

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SECTION 1.14. GENERAL CODE		
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SECTION 2.20. SCALES		
320-1 V	S.1.1. Zero Indication	173
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320-3 VC	S.5.2. Accuracy Classes - Table 3/Class II Scales	175
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320-6 V	T.N.3.4. Tolerance Values/Crane and Construction Materials Hopper Scales	177
320-7 VC	Tolerances Applicable to In-Motion Weighing Devices	178
320-8 V	T.N.5.2. Repeatability/Shift or Section Tests	179
320-9	T.N.6.1.(b) Sensitivity	180
320-10 VC	T.N.8.1.4. Operating Temperature	181
320-11 VC	UR.1.1. General/Table 7a Typical Class or Type of Device for Weighing Applications	181

Specifications and Tolerances Committee

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320-20 VC	Variable Division-Value (Multi-Range) Scales	186
320-21	Report of the Railroad Advisory Committee	186
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Specifications and Tolerances Committee

Table B
VOTING RESULTS

Reference Key No.		House of State Representatives			House of Delegates	
		Yes	No		Yes	No
	Consent Items	46	0		71	0
320-1		28	15	Failed	21	45
320-4	T.N.9.	40	8		60	8
320-4	N.1.6.1.	7	37	Failed	21	49
320-4	N.1.6.2.	29	16		54	8
320-5		45	1		66	2
320-6		46	0		66	3
320-8		45	1		68	1
320-19		43	1		54	0
320-22		43	1		58	0
322-5		45	0		57	3
330-1		43	1		64	0
330-7		32	11		40	24
332-1		23	18	Failed	35	28

Specifications and Tolerances Committee

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(Continued)

Reference Key No.	House of State Representatives			House of Delegates		
		Yes	No	Yes	No	
332-2		43	2	60	1	
334-1		44	0	60	3	
354-1		44	2	63	5	
356-1	Amend #1	17	19	Failed	16	34
356-1	Orig.	17	21	Failed	39	19
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Reconsider Report		32	1	54	3	
356-1	Amend #2	40	0	55	0	
Report		40	0	56	0	
356-2		38	1	53	2	

DETAILS OF ALL ITEMS
(in order by Reference Key Number)

REFERENCE
KEY NO.

Section 1.14. General Code

314-1 VC G.S.5.3.1. VALUE OF GRADUATED INTERVALS OR INCREMENTS/DUAL INDICATIONS

(This item was adopted)

G.S.5.3.1. has required some scales to provide a dual indication where one of the indications was a common base for others. For example, a scale capable of indicating in pennyweights, carats, grams, drams apothecary, and troy ounces, would provide the following comparisons using the unit "gram" as a common base:

- 1 carat = 0.2 gram
- 1 pennyweight = 1.555 grams
- 1 dram apothecaries = 3.888 grams
- 1 ounce troy = 31.103 grams

Applying the principles of the number of scale divisions and the minimum load under the new Scales Code is all that is necessary in determining the appropriateness of a particular design; therefore, the constraint of indicating comparable values is no longer necessary. This is also true with other types of measuring devices and should apply to all codes. Therefore it was recommended this paragraph be amended to read:

G.S.5.3.1. DUAL INDICATIONS ON DEVICES THAT INDICATE OR RECORD IN MORE THAN ONE UNIT.- On equipment devices designed to indicate or record in both inch-pound and metric units, comparable values shall be indicated or recorded in each mode of operation (e.g., 10 lb-5 kg; 0.01 lb-5 g; 0.01 gal-50 mL; 1/8 yd-0.1 m); more than one unit of measurement, the values indicated or recorded shall be identified with the an appropriate unit word, symbol, or abbreviation. (Nonretroactive and enforceable as of January 1, 1978.)

Section 2.20. Scales

320-1 V S.1.1. ZERO INDICATION

(This item was defeated)

Because of the versatility offered by the use of electronics, the zero balance condition of a scale can be controlled by means other than the indication of zero. Weighing errors caused by an out-of-balance scale condition can be significantly reduced by employing new techniques.

Specifications and Tolerances Committee

There are at least two reasons not to drop the "zero" indication as a requirement:

1. hesitancy of weights and measures officials in breaking with tradition; and,
2. the limited value to customers in direct sale applications.

However, the operation of this system is seriously constrained if the scale is required to indicate the customary "0.00" without any benefit in maintaining "0".

Recognizing the value of an indication of a balance condition, such an indication could take the form of a small indicator light labeled "scale ready". Therefore, it was recommended that S.1.1.1. Digital Indicating Elements be amended by adding the following:

S.1.1.1. DIGITAL INDICATING ELEMENTS.- A digital zero indication shall represent a balance condition that is within plus or minus one-half the value of the scale division. An auxiliary or supplemental "center of zero" indicator shall define a zero balance condition to $\pm 1/4$ of a scale division or less. On point-of-sale systems, zero-balance condition may be indicated by other than a "0" value, provided that effective automatic means are provided to inhibit a weighing operation when the scale is in an out-of-balance condition.

320-2

S.3. DESIGN OF LOAD-RECEIVING ELEMENTS

Platforms on vehicle scales were reportedly becoming distorted after use when weighing loads less than scale capacity. It was recommended that a specification paragraph be added requiring scale platforms to be so constructed that they would not suffer permanent deflection or distortion in use. This is already required by General Code paragraph G-S.3. Permanence.

Scale platforms on vehicle scales were reportedly becoming damaged when a large amount of test weights on "dollies" or test carts with small wheels and short axles were used to conduct section tests. It was further reported that the conduct of a section test by moving these types of weights across the center of the scale as required by Scales Code paragraph N.1.3.4. does not simulate the application of the load when weighing vehicles.

This problem is recognized, but the shift test as specified in N.1.3.4. has been a part of H-44 for over 20 years, and corner or load bearing tests had been eliminated at the request of scale manufacturers because vehicle scales were not loaded on individual corners in their normal use.

The Committee has received and accepted an offer from the S.M.A. to form a task force with the Committee to develop design criteria for appropriate test standards for vehicle scales. Comments from other members of the Conference are requested.

320-3 VC 5.5.2. ACCURACY CLASSES - TABLE 3/CLASS II SCALES

(This item was adopted)

The maximum number of scale divisions for a Class II Scale is specified as 50 000. This value was based on OIML IR 3, 5 years ago. Since then, IR 3 has been amended by changing that value to 100 000.

Because there is a need in the U.S. for Class II balances with more than 50 000 divisions, and international uniformity is highly desirable, amendment of Table 3 - Accuracy Classes is recommended as follows:

For Class II scales, change the maximum number of divisions allowable from 50 000 to 100 000.

320-4 V RFI TESTING PROCEDURES

Several comments and suggestions concerning this subject were received including the following:

- Field tests improperly conducted by weights and measures officials have resulted in costly destruction of scale component parts.
- It is not appropriate to conduct RFI tests at a location where the background RFI has not been quantified.
- RFI tests should only be conducted in the laboratory during a type evaluation.
- RFI tests should only be conducted in the field and only after the presence of RFI has been verified. The tests conducted should replicate the RFI that is determined as being present.
- When a device is subjected to RFI/EMI tests, the allowable response should be quantified.

The significance of these comments was examined. The availability and use of hand-held communicators is believed to be extensive. Type evaluation laboratories have been conducting RFI laboratory tests during type evaluation on all equipment submitted for at least four years. Based on this experience, it is evident that a minimum amount of "shielding" should be required on all electronic equipment, consistent with the SMA recommended field test procedures and equipment as published in 1977 and adopted by the 63rd NCWM in 1978.

It is recognized that this minimum "shielding" may not be sufficient in certain field installations therefore, field tests should be conducted consistent with the equipment and environment found at the installation, but only if the presence of any EMI or RFI is verified. There is a need to specify the appropriate allowable response on weighing equipment when subjected to these tests.

Specifications and Tolerances Committee

The following Scales Code amendments were recommended and offered in three parts: N.1.6.1.; N.1.6.2.; and T.N.9.

Add a new note paragraph as N.1.6. with two sub-paragraphs to read:

(This part was defeated)

N.1.6. RFI Susceptibility Tests.

N.1.6.1. Type Evaluation. - An RFI test shall be conducted during a type evaluation as follows:

At a distance not nearer than 1 meter to the equipment under test, and with the scale in a no-load condition and at any test load, operate the following equipment by alternately activating and deactivating the transmitter key under the specified conditions.

<u>Frequency</u>	<u>Field Strength</u>	<u>Modulation</u>
27-MHz 5-watt hand-held communicator	Not to exceed 3 V/m	50 % Amplitude, 1 kHz Sinewave
460-MHz 4-watt hand-held communicator	Not to exceed 3 V/m	50 % Amplitude, 1 kHz Sinewave

(This part was adopted)

N.1.6.2. Field Evaluation. - An RFI test shall be conducted at a given installation when the presence of RFI has been verified and characterized if those conditions are considered "usual and customary".

Renumber paragraphs N.1.6. and N.1.7. to N.1.7. and N.1.8. respectively.

Add a new paragraph T.N.9. to read:

(This part was adopted)

T.N.9. RADIO FREQUENCY INTERFERENCE (RFI) AND OTHER ELECTROMAGNETIC INTERFERENCE SUSCEPTIBILITY. - The difference between the weight indication with the disturbance and the weight indication without the disturbance, shall not exceed one scale division (d) or the equipment shall:

- (a) blank the indication, or
- (b) provide an error message, or
- (c) the indication shall be so completely unstable that it could not be interpreted, or transmitted into memory or to a recording element, as a correct measurement value.

To clarify that T.N.9. also applies to unmarked devices, add a new paragraph numbered T.4. to read the same as T.N.9.

320-5 V

N.2. VERIFICATION (TESTING) STANDARDS

(This item was adopted)

The necessary accuracy of field standard test weights was not clear in those situations when the tolerance applicable to a scale under test is less than 0.05% (1/2 000). The principle expressed in H-44, Sec. 1.11. Fundamental Considerations, paragraph 3.2. is "the error in the standard should not be greater than 25% of the smallest tolerance to be applied to the equipment under test when the standard is used." With the tolerances now specified in the scales code, there are instances when Class F field standard test weights with an error at the tolerance limits specified in NBS H-105-1, cannot be used without correction because the error in the test weights will exceed the 25% of the smallest tolerance. It is recommended that:

Section 1.11., paragraph 3.2. and scales code paragraph N.2. be changed from 25% to 1/3.

The following is offered for guidance in the use of field standard test weights.

- Class F weights can be used to test all Class III L and Class III scales.
- Class F weights can be used to test all class III scales with the following exception; if acceptance tolerance is to be applied and the scale has 8330 divisions or more, the error in the weight cannot exceed 0.00833% (1/12 000).
- Class II scales must be tested with weights conforming to H-105-1 but the error limits must be those specified for OIML Class F1 weights. When the value of the verification scale division (e) of a Class II scale is 1 mg, the test loads must be comprised of individual weights and not a group of weights.
- Since Class F1 weights require special care and caution in use it is recommended that sets of weights of this class be under the supervision and care of the metrologist. When Class F1 weights are used to evaluate a device in the field, the field official should be instructed in their use.

320-6 V

T.N.3.4. TOLERANCE VALUES/Crane AND CONSTRUCTION MATERIALS HOPPER SCALES

(This item was adopted)

Confusion exists regarding the acceptance and maintenance tolerance values applicable to these devices. Paragraph T.N.3.4. specifies that the tolerances are those in Table 6 which lists maintenance tolerances only. The reference to acceptance tolerances is in paragraph T.N.3.2. Because paragraph T.N.3.2. is not referenced in paragraph T.N.3.4., it could be concluded that there are no acceptance tolerances applicable to these devices.

Specifications and Tolerances Committee

To clarify this situation, amendment of the Code is recommended as follows:

Wherever Table 6 is referenced in the current code, and it is intended that acceptance tolerances should also apply, delete the reference to Table 6 and replace it with reference to paragraphs T.N.3.1. and T.N.3.2.

All crane and hopper scales shall be designed to meet accuracy Class III as specified in Table 3. The tolerances to be applied require code amendment as follows.

Amend T.N.3.4. to read:

T.N.3.4. CRANE AND CONSTRUCTION MATERIALS HOPPER (OTHER THAN GRAIN HOPPER) SCALES. — The maintenance and acceptance tolerances shall be as specified in Table 6 T.N.3.1. and T.N.3.2. for Class III L, except that the tolerance for crane and construction materials hopper scales shall not be but never less than 1d or 0.1 percent of the scale capacity, whichever is less.

320-7 VC TOLERANCES APPLICABLE TO IN-MOTION WEIGHING DEVICES

(This item was adopted)

Several comments had been received with respect to T.N.3.6. dealing with in-motion weighing. These include: (a) difficulty in understanding the application of the four sub-paragraphs; and (b) the greater tolerances for scales with a small number of divisions (like a monorail scale) when compared to the previous code. Representatives of the USDA Packers and Stockyards Administration have suggested that the tolerance application to in-motion tests on monorail scales should be changed back to that of the previous code.

Code amendment is recommended as follows:

T.N.3.6. IN-MOTION WEIGHING, OTHER THAN MONORAIL SCALES.— Tolerances for a group of weighments appropriate to the application must satisfy the following conditions:

Add a new paragraph T.N.3.7. to read:

T.N.3.7. IN-MOTION WEIGHING, MONORAIL SCALES.— On an in-motion test of 20 or more individual test loads, 10% of the individual test loads may be in error, each not to exceed two times the static tolerance applicable. The error on the total of the individual test loads shall not exceed + 0.2%.

320-8 V

T.N.5.2. REPEATABILITY/SHIFT OR SECTION TESTS

(This item was adopted)

Shift or section tests are not "repeatability" requirements, but relate to T.N.4. Agreement of Indications.

There are difficulties in interpreting the three paragraphs of the T.N.4. section which need to be clarified.

These sections deal with three different designs of a scale or weighing system.

The first is an installation that includes two or more indicating and/or recording elements that are intended to be used independently of one another. An example is a scale equipped with a digital indicator and a printer that is intended to be used for normal weighing. It is also equipped with a "standby" dial and printer or type-registering weighbeam, which are intended to be used in the case of a power failure or other failure in the electronic indicator. In this instance, it is intended that tolerances are to be applied to each combination of indicating and recording elements that are used in combination, and when not used in combination are to be applied independently. Thus, whichever indicator is in use, the scale weighs within tolerances. It is not intended that the indicators "agree" with each other at any test load. Thus, one paragraph must deal with this condition which will be T.N.4.1. and recommended to read:

T.N.4.1. MULTIPLE INDICATING/RECORDING ELEMENTS. - In the case of a scale or weighing system equipped with more than one indicating element or indicating element and recording element combination, where the indicators or indicator/recorder combination are intended to be used independently of one another, tolerances shall be applied independently to each indicator or indicator/recorder combination.

The second design is a scale or weighing system that is equipped with various means of indicating the weight of the same load, that are intended or can be used in combination. For example, a dial equipped with "drop" or "unit" weights, a weighbeam with counterpoise weights, a dial equipped with tare bars, a batching system equipped with two or more weighbeams, or a weighbeam with a "weight-o-graph". The concern here is that, whatever means is used to indicate the load, the value obtained is within tolerance and the difference between the indications is not so significant. Thus another paragraph must deal with this situation which will be T.N.4.2., and recommended to read:

T.N.4.2. SINGLE INDICATING/RECORDING ELEMENT. - In the case of a scale or weighing system with a single indicating element or an indicating/recording element combination and equipped with component parts such as unit weights, weighbeam and weights, or multiple weighbeams that can be used in combination to indicate a weight, the difference in the weight value indications of any load shall not be greater than the absolute value of the applicable tolerance for that load, and shall be within tolerance limits.

Another design is a scale or weighing system equipped with two analog indicators within the same element used to indicate the same load, usually one for the buyer and one for the seller. Examples are drum type computing scales and circular dials equipped with graduations and an indicator on both sides of the dial head. Since two different parties are observing a weight indication for the same load at the same time, there must be specified a maximum difference between these indications. Since all analog indications for a given load are to be read to the closest graduation, the maximum difference to be allowed is $+ 1/2 d$, with both values within tolerance. Thus there is a need for the third paragraph numbered T.N.4.3. and recommended to read:

T.N.4.3. SINGLE INDICATING ELEMENT/MULTIPLE INDICATIONS. - In the case of an analog indicating element equipped with two or more indicating means within the same element, the difference in the weight indications for any load other than zero shall not be greater than one-half the value of the scale division (d) and be within tolerance limits.

There are other combinations encountered. An example is a scale with two digital indicators, one intended for the operator, and the other intended for the other party in the transaction. These indicators could also be equipped with printers. The applicable requirement in this situation is General Code paragraph G-S.5.2.2. (a) which requires that all digital values in a system indicating the value of the same load agree with one another.

Another combination is an analog dial equipped with a printer. The requirement applicable to the agreement between the analog value indicated and the digital value recorded is also found in the General Code paragraph G-S.5.2.2. (b) which requires a digital value (recorded) to coincide with its associated analog value (indicated) to the nearest scale division.

To clarify the intent of the shift or section tests, it is recommended that paragraph T.N.5.2. be deleted and a new paragraph T.N.4.4. be added to read:

T.N.4.4. SHIFT OR SECTION TESTS. - The range of the results obtained during the conduct of a shift test or a section test shall not exceed the absolute value of the maintenance tolerance applicable and each test result shall be within applicable tolerances.

320-9 T.N.6.1.(b) SENSITIVITY

A concern was expressed that, with the new sensitivity requirement of $1d$ at zero load and $2d$ at the maximum test load, a scale marked with an accuracy class and equipped with a balance indicator can have a sensitivity of $2d$ under maximum test load, while an unmarked device must have a sensitivity of $1d$.

A balance indicator can be equipped with separate means to adjust the sensitivity. With this type of indicator, there is little change, if any, in the sensitivity at zero load and at maximum test load. This is unlike a weighbeam in which there are many factors impacting on the sensitivity, including the plumb and level conditions of the levers and steelyard rod, the

range of the levers and weighbeams, and the condition of the pivots and bearings, which do affect the sensitivity under a load.

There also are balance indicators that do not have separate means to adjust the sensitivity; for example those with a reference mark or "indicator" that is a part of, or an extension of the weighbeam, and a reference mark or indicator that is a part of or extension of the trig loop. These devices are subjected to the same variations in the sensitivity as a weighbeam. Thus the 1d maximum sensitivity value at no-load and 2d under maximum test load is a valid principle.

The maximum sensitivity value of a balance indicator that is designed with means to adjust the sensitivity will be about the same when the scale is under a no-load or a loaded condition. Thus, when a balance indicator is so equipped and required to comply with the 1d requirement under a no-load condition, there is no reason to believe that the sensitivity will deteriorate under a load. Therefore, no amendment to the Code was recommended.

Concern was expressed that the sensitivity requirements may not be appropriate, therefore this item will continue to be studied and included on next year's agenda.

320-10 VC T.N.8.1.4. OPERATING TEMPERATURE

(This item was adopted)

Paragraph S.1.4.2. Values Displayed, Temperature Conditions was added to the Scales Code in 1979 as a nonretroactive paragraph and became effective January 1, 1981. In the new Scales Code, it was included as a performance requirement in T.N.8. Influence Factors as T.N.8.1.4. Operating Temperature. Since the T.N.8. section only applies to devices marked with class numbers, an omission occurs when unmarked devices are tested. To correct this situation, it was recommended that a new paragraph be added to read:

T.5. OPERATING TEMPERATURE. - An indicating or recording element shall not display or record any usable values until the operating temperature necessary for accurate weighing and a stable zero balance condition has been attained. (Nonretroactive and effective as of January 1, 1981)

320-11 VC UR.1.1. GENERAL/TABLE 7a TYPICAL CLASS OR TYPE OF DEVICE FOR WEIGHING APPLICATIONS

(This item was adopted)

A need to recognize the use of Class III scales for retail weighing of precious metals and gems, (generally fabricated jewelry sold by jewelers to consumers, or used precious metals sold to jewelers by individuals) was cited. Class III devices equipped with a scale division value and number of scale divisions that are appropriate can be used for the retail weighing of precious metals and gems. Amendment of Table 7a was recommended as follows:

Specifications and Tolerances Committee

Change description for Class III devices to read:

All commercial weighing not otherwise specified, grain test scales, retail precious metals and semi-precious gem weighing.

It was necessary to clarify that a user could use a scale of a higher accuracy class for a weighing application than indicated on this table. Addition of the following footnote to Table 7a was recommended:

Note: A scale with a higher accuracy class than that specified as "typical" may be used.

320-12 NEW USER REQUIREMENTS

Several recommendations were received to add new User Requirements in recognition of certain practices that could develop under the new Scales Code. A discussion of and the recommendations for each follows.

Increase Scale Division Values

A user could increase the value of the scale division after a device was rejected for repairs. Since the tolerances are a function of the value of the scale division, the effect of this action would be to increase the tolerances to be applied, and in some instances the device would then be found to meet the code requirements.

If the scale in question is equipped with an analog indicator, such as a weighbeam or a dial, increasing the value of the scale division would require the replacement of the dial. If for example, a 1000 x 1 lb dial were replaced with a 2000 x 2 lb dial the scale capacity would be increased beyond its limit and the scale would not be acceptable. It is highly unlikely that a dial would be replaced. A weighbeam is more apt to be replaced, but the same analogy applies.

Most digital indicators could be changed within the instrument by the movement of a "dip switch."

The replacement of the indicator is the choice of the device owner. If a change is made, the scale is subject to reevaluation on the suitability of the "new design"; if it meets all the requirements of the Code, it is acceptable.

Keyboard Adjustments

Concern was expressed about the use of a keyboard to "span" a scale, and the method for sealing such a capability. Paragraph S.1.10. Provision For Sealing Adjustable Components on Electronic Devices covers this situation. A security seal must be "broken" before a scale can be adjusted with the use of a keyboard.

Combination Railway Track and Vehicle Scales

A suggestion was made that these scales be equipped with separate indicators for each weighing application.

A combination railway track and vehicle scale must meet all the requirements of the code for each weighing application including the number of scale divisions (n) and the value of the scale division (d). The best possible solution is a device equipped with a digital indicator designed as a manual multi-range device. When a railroad car is weighed, the manual switch is placed in the "rail car weighing mode" (for example, 400 000 lb x 100 lb). When a motor vehicle is weighed, the switch is placed in that "motor vehicle mode" (for example, 120 000 lb x 20 lb).

320-13 VC POINT-OF-SALE SYSTEMS

(This item was adopted)

Several comments and suggestions concerning these systems were received. A discussion of and the recommendations for each follows.

Tare

It was recommended that a new user requirement be added to require that these systems be equipped with a tare capability. Whenever such a system is used to weigh commodities in a container, it must be provided with a tare capability. See the discussion and explanation provided in the Report of the Specifications and Tolerances Committee to the 58th NCWM 1973 on pages 149-164. Also, Section 1.2 of the Uniform Weights and Measures Law specifically defines "weight" as meaning net weight. This has been the position of the Conference since the introduction of this equipment. In all type evaluations conducted by OWM, this equipment has always been required to be equipped with a tare capability. Thus no new user requirement is deemed necessary; the requirement needs to be enforced.

Scanner Prices and Posted Prices

A request was received to confirm an interpretation that it is a weights and measures responsibility to insure that the "scanned" price is the same as the "posted" price. This issue was discussed in the report of the S&T Committee to the 58th Conference and in the L&R Report to the 70th NCWM. It is the position of the NCWM that the posted price must be the same as the "scanned" price under the Uniform Weights and Measures Law, Section 15, Misrepresentation of Price. Enforcement action should be taken on any violation. Since the "scanner" price is often programmed or input from a location other than the store where violations are found, it is recommended that any action be taken against the store for posting the prices incorrectly. Because item marking practices vary significantly, a uniform test method of verifying agreement between scanned and posted prices may not be applicable. Several different sampling methods have been published. It is recommended that each be reviewed and one that suits the need of the particular jurisdiction be used.

Specifications and Tolerances Committee

Definitions

It is recommended that the following definition be added to the Scales Code:

point-of-sale system. An assembly of elements including a weighing element, an indicating element, and a recording element, (and may be equipped with a "scanner") used to complete a direct sales transaction.

320-14 HAND-HELD SCALES

A suggestion was received that the use of scales supported by hand should be prohibited because of the inaccuracies that can result. This prohibition is already covered by paragraph UR.2.2. which requires a hanging scale to be freely suspended from a fixed support when in use.

320-15 VC PRESCRIPTION SCALES

(This item was adopted)

The design of prescription scales has been typically 120 grams x 0.01 gram with an acceptance and maintenance tolerance of $\pm 0.1\%$. For several reasons this design does not meet the requirements of the new Scales Code. The principal reason is that a scale with a division value of 0.01 gram is a Class II scale; however, the accuracy of Class II scales is far greater than $\pm 0.1\%$.

To recognize the use of this much needed design without unnecessarily changing the needed performance requirements, an amendment to Table 3, Accuracy Classes, is recommended:

Add an additional footnote:

****A scale marked "For prescription weighing only" may have a scale division of not less than 0.01 gram.**

In order to apply this exception, a Class III scale with a value of "d" equal to 0.01 gram would have to be marked to clearly indicate it is for prescription use only as required by paragraph S.6.6. Marking/Scales Designed for Special Applications. Field inspectors are not normally equipped with the necessary apparatus and standards to determine the accuracy of the weights associated with a prescription scale. It is recommended that such a device be tested in the field with the weights associated with the scale placed on the same pan on which they would normally be placed, and standard weights applied to the pan normally used to weigh the load. This would not be considered a ratio test, since a ratio test would require standard weights on both pans; thus the ratio test tolerances would not apply.

320-16 VC WEIGHMENT

(This item was adopted)

It is recommended that the code be amended by adding the following definition:

weighment. A single complete weighing operation.

320-17 VC T.1.6.1. JEWELERS' SCALES/ WITH A CAPACITY OF ONE-HALF OUNCE OR LESS

(This item was adopted)

The following editorial change is necessary so that the performance requirements applicable to these devices not marked with an accuracy class are consistent with those specified prior to 1986. Delete the heading:

"T.1.6.1. WITH A CAPACITY OF ONE-HALF OUNCE OR LESS".

Thus, the text paragraph of former T.1.6.1. will now be under the heading T.1.6. Jewelers' Scales.

320-18 VC S.4.2. ADJUSTABLE COMPONENTS

(This item was adopted)

This paragraph was discussed from two standpoints: (1) the heading of S.4. is Weighing Elements and the referenced adjustable components include potentiometer and springs which may be a part of an indicating element; and, (2) it is specified that adjustable components shall not be adjustable from outside the scale.

This paragraph is intended to apply to any or all adjustable components that affect the performance of a scale, whether they are a part of the weighing element like a nose iron, or a part of the indicator, like a pendulum or a potentiometer.

It is also appropriate for a "span" adjustment located within the housing of an electronic digital indicator to be adjusted from outside the scale provided that a seal must be broken to do so.

The following amendments were offered to clarify these issues.

Add a new paragraph to read:

S.1.10. ADJUSTABLE COMPONENTS. - An adjustable component such as a pendulum, spring, or potentiometer shall be held securely in adjustment and, except for a zero load balance mechanism, shall be located within the housing of the element.

Renumber present S.1.10. to S.1.11.

Revise S.4.2. to read:

S.4.2. ADJUSTABLE COMPONENTS. - An adjustable component such as a nose iron pendulum, spring or potentiometer shall be held securely in adjustment and except for the level adjustment and zero load balance, mechanisms shall not be adjustable from the outside of the scale. The position of a nose-iron on a scale of more than 2000-lb capacity, as determined by the factory adjustment, shall be accurately, clearly, and permanently defined.

320-19 V T.N.8.2. HUMIDITY

(This item was adopted)

Amendment of the code as follows was recommended so that the requirements of this paragraph are consistent with International Standards:

Change the specified relative humidity value of 95% to 93%.

320-20 VC VARIABLE DIVISION-VALUE (MULTI-RANGE) SCALES

(This item was adopted)

The verification scale division "e" is not applicable to these devices; the following addition to the code was recommended:

S.5.3. On a variable division-value (multi-range) scale the value of "e" shall be equal to the value of "d".

Change the definition of "variable division-value scale" as follows:

A scale so designed that the value of the verification scale division (e), in the same unit of weight, increases at certain load values within the weighing range of the scale (e.g., a load to 5 pounds in 0.005-lb scale-division, 5-pounds-plus-to-20-pounds-in-0.010-pound-divisions)."

320-21 REPORT OF THE RAILROAD ADVISORY COMMITTEE

During the interim meeting, a representative of the Railroad Advisory Committee made a report on the data collected from a limited number of tests conducted on coupled-in-motion railway track scales. It was reported that this group was prepared to make recommendations to the NCWM but they felt that other interested parties should have an opportunity to review the data first. The Railroad Advisory Committee offered to serve as a steering committee to pursue this issue and a request was made for participation from AREA 34, SMA, Western Coal Transportation Association, National Coal Weighing Association, and any other scale users.

It is hoped that this invitation is accepted by representatives of other organizations so that final recommendations made to the NCWM will be from a broad segment of interested parties.

The railroad industry was encouraged to prepare a report for consideration by the S&T Committee at its next interim meeting.

320-22 V REPORT OF THE NTETC - WEIGHING INDUSTRY SECTOR

(This item was adopted)

This Technical Committee met on November 13 and 14, 1985, January 20, 1986, and January 22, 1986. Their recommendations were reviewed by the Specifications and Tolerances Committee and are recommended for adoption by the NCWM. The recommended additions and amendments to the draft Type Evaluation Handbook are listed in Appendix A.

Section 2.21. Belt-Conveyor Scale Systems

321-1 VC S.1.5. RATE OF FLOW INDICATOR AND/OR RECORDER

(This item was adopted)

A conflict was reported between paragraph S.1.1. (which requires a rate of flow indicator or recorder) and paragraph S.1.5. (which requires a rate of flow indicator). To resolve this conflict, S.1.1. is recommended to read:

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 and recorder (which may be analog).*** An auxiliary indicator shall not be considered part of the master weight totalizer.
***(Nonretroactive as of January 1, 1986)**

This will eliminate the conflict and require a rate of flow indicator and recorder on a nonretroactive basis. However, since General Code paragraph G-S.5.6. Recorded Representations requires "all recorded values shall be printed digitally", it is recommended that an exception to this paragraph be included, since analog rate of flow recorders are considered acceptable in this application.

321-2 VC N.2. CONDITIONS OF TESTS

(This item was adopted)

A comment was received that the last part of this paragraph needed editorial change to provide more clarity. The following change is recommended:

Change the last two sentences to read:

Each test shall be not less than 1000 scale divisions and at least three revolutions of the belt. In addition, one of the following must be met, whichever-is-applicable conducted for:

a- Ten-minutes-operation, or

b- A-normal-weighment, which-need-not-exceed-1000-tons.

- a. not less than 1000 scale divisions,
- b. at least three revolutions of the belt, and
- c. at least 10 minutes' operation, or for a normal weightment.

321-3 VC N.3.2. MATERIAL TESTS (f)

(This item was adopted)

Paragraph (f) requires a minimum of three tests for each official verification. A suggestion was made that fewer tests should be considered adequate because these tests are costly and time-consuming. At least three such tests are essential in an initial verification, (i.e., the first test of the equipment at a given installation). However, for subsequent verifications the results of two tests combined with the information available from previous tests could be adequate. It is on this basis that the following amendment is recommended:

Amend part (f) to read:

(f) On initial verification at least a minimum of three individual tests shall be conducted for each official verification. On subsequent verifications, at least two individual tests shall be conducted. The performance of the equipment scale is not to be determined by averaging the results of the individual tests. The results of all of these tests shall be within the tolerance limits.

321-4 VC N.3.3.(a) CHAIN TEST

(This item was adopted)

A comment was received that the equation expressed in the last sentence of this paragraph is incorrect. The Committee agrees and recommends that the last sentence be revised to read:

~~The test load is the actual belt travel, in terms of feet, divided by the marked belt travel, in terms of feet, times the marked number of weight-units-totalized.~~

When the actual travel is greater or less than the "marked belt travel" the value of test load shall be adjusted as follows:

$$\frac{\text{actual belt travel (ft)}}{\text{marked belt travel (ft)}} \times \text{weight units calculated for the marked belt travel} = \text{value of test load}$$

Example:

$$\frac{1002 \text{ ft}}{1000 \text{ ft}} \times (100 \text{ lb/ft} \times 1000 \text{ ft}) = 1.002 \times 100\,000 \text{ lb} = 100\,200 \text{ lb}$$

321-5 VC UR.3.2. (c) SCALE ALIGNMENT

(This item was adopted)

A comment was received that this paragraph refers to "wireline", which is not defined and that such alignment checks shall be "considered" as opposed to "required." In response the Committee recommends the following editorial change:

(c) Scale Alignment. - "Wireline" (0.02-inch-diameter piano wire or equivalent nylon line) alignment checks shall be conducted 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.

Section 2.22. Automatic Bulk Weighing Systems For Grain

Discussion and review of this code was held with representatives of the Federal Grain Inspection Service. As a result, it was determined that revisions were necessary to make this code consistent with recent changes to the Scales Code. Code revisions as follows are recommended:

322-1 VC FOR SYSTEMS USED TO WEIGH OUT

(This item was adopted)

Add a new paragraph N.1.2. for a decreasing-load test on such systems to read:

N.1.2. DECREASING-LOAD TEST. - A decreasing-load test shall be conducted on devices used to weigh out.

Renumber current N.1.2. to N.1.3.

Add a new tolerance paragraph for decreasing-load tests to read:

T.1.3. TO DECREASING-LOAD TESTS. - Basic tolerances shall be applied to systems used to weigh out.

322-2 VC FOR DIGITAL INDICATIONS

(This item was adopted)

Add a new tolerance paragraph to read:

T.1.4. TO TESTS INVOLVING DIGITAL INDICATIONS OR REPRESENTATIONS. - To the tolerances that would otherwise be applied, there shall be added an amount equal to one-half the value of the scale division. This does not apply to digital indications or recorded representations that have been corrected for rounding using error weights.

322-3 VC TIME DEPENDENCE

(This item was adopted)

Add a new paragraph to this code identical to the Scales Code paragraph T.N.4.4. Time Dependence on a nonretroactive basis.

T.4. TIME DEPENDENCE. - At constant test conditions, the indication 20 seconds after the application of a load and the indication after one hour shall not differ by more than the absolute value of the applicable tolerance for the applied load. (Nonretroactive and enforceable as of Jan. 1, 1987)

322-4 VC REPEATABILITY

(This item was adopted)

Add a new paragraph to this code identical to the Scales Code paragraph T.N.5.1. Repeatability/General.

T.5. REPEATABILITY - The results obtained by several weighings of the same load under reasonably static test conditions, shall agree within the absolute value of the maintenance tolerance for that load, and shall be within applicable tolerances.

322-5 V EXTENDING THE APPLICATION OF THIS CODE

(This item was adopted)

A request was made last year to review this code and recommend necessary amendments so that it could be applied to all automatic bulk weighing systems. In its Report to the 70th NCWM (1985), Item 304-3, the Committee tentatively recommended several amendments and requested comments so that it could make positive recommendations for action by the 71st NCWM. No further comments have been received.

This code should be amended to recognize all bulk weighing systems. Recommended code amendments are as follows:

Amend title by deleting the term "for grain".

Add the following paragraph:

T.2.1. 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.

Delete the current T.3. and substitute the following tolerance paragraphs:

T.3. BASIC TOLERANCE VALUES.

T.3.1. ACCEPTANCE TOLERANCE. - The basic acceptance tolerance shall be one-half the basic maintenance tolerance.

T.3.2. FOR SYSTEMS USED TO WEIGH GRAIN. - The basic maintenance tolerance shall be one pound per 1 000 pounds of test load (0.1 percent).

T.3.3. FOR ALL OTHER SYSTEMS. - The basic maintenance tolerance shall be 2 pounds per 1 000 pounds of test load (0.2 percent).

Delete the current UR.1. and UR.3. and substitute the following user requirements:

UR.1. SELECTION REQUIREMENTS.

UR.1.1. FOR SYSTEMS USED TO WEIGH GRAIN.- The number of scale divisions of a weighing system shall not be less than 4 000 or greater than 10 000 for a system with a capacity greater than 10 000 pounds, and not less than 2 000 or greater than 10 000 for a system with a capacity equal to or less than 10 000 pounds. (Nonretroactive and enforceable as of January 1, 1984.)

UR.1.2. 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. (Nonretroactive as of January 1, 1987)

UR.3. LOADING REQUIREMENTS.

UR.3.1. FOR SYSTEMS USED TO WEIGH GRAIN.- A system shall not be used to weigh drafts less than 40 percent of the weighing capacity of the system except for a final partial draft. Loads shall not normally be retained on the weighing element for a period longer than a normal weighing cycle.

UR.3.2. FOR SYSTEMS USED TO WEIGH COMMODITIES OTHER THAN GRAIN.- A system shall not be used to weigh drafts less than 20 percent of the weighing capacity of the system except for a final partial draft. Loads shall not normally be retained on the weighing element for a period longer than a normal weighing cycle. (Nonretroactive as of January 1, 1987)

Section 3.30. Liquid-Measuring Devices

330-1 V

S.1.1.2. UNITS

(This item was adopted)

Amendment of this paragraph was requested to allow devices to indicate in other than volumetric units. The request was made to recognize:

- (a) devices that measure liquid commodities by other than volumetric means (specifically mass flow meters that indicate in units of mass); and

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- (b) devices that measure by volumetric means when a trade custom exists for selling in other units (liquid feeds and fertilizers).

The code should be amended to recognize both cases. In the first case no problem arises with temperature considerations in the measurement process since the measurement is "mass" that is independent of measurement variations caused by product volumetric expansion or contraction.

In the second case, temperature is a concern. For example, if a trade custom was followed to weigh liquid molasses, and the product was heated to expedite its flow in the delivery process, the measurement results would not be affected. However, this is not true if the heated product was measured volumetrically. In this instance, if a meter was used and the delivery ticket issued presented quantity values in terms of weight, the buyer might not be aware that the product was "measured" and not "weighed". The problem would be further compounded if the meter used was equipped with an automatic temperature compensator that compensated on the basis of a 60 °F gallon and the product measured was other than a petroleum product that should be compensated on the basis of a 68 °F gallon. The unavailability of appropriate volume correction factors tables is a further problem.

These problems should not constrain an equitable marketing process and code amendments should be made in recognition of both measurement practices.

Amendments would be necessary in all the existing Liquid Measuring Devices Codes except the Cryogenic Code (since provisions in that code already exist). These amendments would be simplified if the NCWM accepted the revised LMD codes.

Add a new paragraph:

S.1.1.2.2. FOR AGRI-CHEMICAL LIQUIDS. - A device used for the measurement of agri-chemical products shall indicate and record its deliveries in terms of: (a) liters or gallons and decimal subdivisions or fractional equivalents thereof for liquid measure, or (b) kilograms or pounds and decimal subdivisions or fractional equivalents thereof for weight.

Amend S.1.1.3. VALUE OF SMALLEST UNIT PART (b) to read:

(b) one gallon or 10 pounds on wholesale devices.

Amend the title of S.2.6. to read:

FOR WHOLESALE DEVICES ONLY, TEMPERATURE DETERMINATION EXCEPT FOR MASS FLOW DEVICES

Amend paragraph T.2.3.2. to read:

T.2.3.2. USED FOR THE MEASUREMENT OF AGRI-CHEMICAL LIQUIDS. - The maintenance tolerance on normal and special tests shall be 1% of the indicated volume quantity. The acceptance tolerance on a normal test shall be 0.5% of the indicated volume quantity and on special tests, 1% of the indicated volume quantity.

330-2 W S.1.4.3. DISPLAY OF UNIT PRICE AND PRODUCT IDENTITY AND UR.3.2. UNIT PRICE AND PRODUCT IDENTITY

This item, dealing with the definition of "face" and "side" of a device was deleted from the report for further review.

330-3 BLENDING TYPE RETAIL MOTOR FUEL DISPENSERS

An item was reintroduced concerning the problem faced when a unit price display is different than the unit price setting. A suggestion was made that the code be amended to require that the unit price indication be interlocked with the unit price setting means on a blending motor fuel dispenser.

As a result of these past discussions, the conclusion reached was that this is an enforcement problem, not a design problem, and action should be taken against the owner/operator of the equipment. If the unit price displayed is not set so that it is clearly visible in the opening provided for the display, maintenance is obviously necessary.

On a non-blending type device, the interlocking or the display of the unit price was not required, but was included in the design by the manufacturer as a convenience to the user. However, it was too costly to provide this same convenience in the design of a blending type device.

When the displayed unit price is clear and different from that at which it is set, enforcement action should be taken. In the case where the displayed unit price is not clear, maintenance is required. No code amendment is recommended.

330-4 VC ELAPSED-TIME TESTS

(This item was adopted)

A suggestion was received that all reference to elapsed-time tests should be deleted from the code because: (1) none are being conducted; and (2) the conditions that caused their inclusion have for the most part been eliminated.

It is recommended that the Code be amended as follows:

Delete LMD Code paragraphs N.4.3., N.4.3.1., N.4.3.2., and T.2.4., and delete the reference to elapsed-time tests in paragraphs T.2.1.1., T.2.1.2., and T.2.3.1., and delete the definition for elapsed-time tests.

330-5 TEMPERATURE COMPENSATING DEVICES AND SYSTEMS ON
WHOLESALE METERS

A suggestion was received to study the need for code amendment to recognize that the means used for temperature compensation at loading-rack meters is electronic (with temperature probes and microprocessors) as well as mechanical. It was suggested that data concerning the operation of this new equipment should be requested from weights and measures officials, manufacturers, and users and submitted to OWM for review.

The subject was reviewed and discussed. Reference was made by the Committee to its report to the 68th NCWM (1983) Item 303-6 pages 257-258. The topics discussed included bottom loading, prover design, meter tolerances, tolerances for temperature sensing means, tolerances for automatic temperature compensators, gross gallons, net gallons, marketing practices, uniform standards, test methods, and equity.

A review and summary of those subjects impacting on the final decisions and recommendations on this subject are recorded below.

Uniform Standards/Equity

Voluntary use of temperature compensation does not provide a uniform standard nor equity. When the quantity of product is sold on a "gross" or "net" basis at the choice of the buyer or seller, it is not reasonable to assume that all parties in the transaction clearly understand the effect of their decision. If weights and measures administration is to provide and maintain uniform standards for the conduct of commerce, a uniform standard should be established. In doing so, it must be recognized that the volume of almost all liquids about which weights and measures are concerned, does change with changes in temperature. This fact is especially important when the measurement of the product takes place at one location and the delivery at another location or at a different time, as is the case for packages, for example. This physical fact has been recognized in the Uniform Packaging and Labeling Regulation which requires that the volume of a product be expressed at a specified temperature. This is not the case in the sale of bulk commodities, where there exists a choice of either "gross" or "net" is optional.

When the measurement and delivery occur at the same place and time, the resultant change in volume caused by a change in temperature has less economic significance. When the temperature conditions in a given marketing area are stable, the relative change in volume is quite small.

Prover Design

Over the last several years it has become evident that differences in prover design have caused problems in the test of loading-rack meters, especially with bottom loading provers. Variations in the ambient temperature and the method of fill have resulted in differences in test results greater than the repeatability of the meter under test.

NBS H-105-3, should be revised to include; (1) a specific design for bottom loading; (2) a requirement that the bottom-fill design of a prover should duplicate as nearly as practical the used loading process; and (3) values in the Handbook and in its tables should be expressed in terms of hard values for the inch-pound system and hard values for the metric system.

Tolerances for Temperature Sensing Means/Automatic Temperature Equipment

The subject of tolerances on temperature sensors was discussed at length. To specify a tolerance on this equipment would require that "standard" thermometers be supplied and used by weights and measures officials. It was decided that this requirement, with its added burden of additional testing time, was not the proper approach.

A tolerance on automatic temperature compensators (atc's) was also discussed. The data submitted by the Meter Manufacturers Technical Committee presented at the Automatic Temperature Compensation Symposium held at the National Bureau of Standards in 1979, the data obtained from weights and measures officials, and the data in annual reports of weights and measures jurisdictions (indicating rejection ratios of from 20% to 40%) clearly indicated that some recognition had to be made of the additional uncertainties and errors in the measurement process caused by this equipment.

The best solution to this overall problem is to include these errors and uncertainties in the tolerances applicable to the equipment under test.

Test Methods

Variations in test methods used by industry and weights and measures officials caused variations in test results. It was also stated that these variations were significant enough to require the industry to occasionally "set" the meter performance at a value considered to be incorrect by the maintenance personnel representing the owner/user of the meter. It was also contended by the industry that weights and measures officials were not taking into account the variations in the volume of the prover caused by the temperature of the prover itself. The industry involved was also concerned with the variations in the methods used when calibrating provers.

It was considered that the goal of industry in establishing meter performance may be slightly different than the goal of weights and measures officials, even though the goal of each was to attain the best measurement possible. The resultant error and uncertainties in the calibration process, as well as the tolerances allowable on a prover were reviewed.

It must be recognized that two provers, similar in design, each calibrated by acceptable methods, does not necessarily result in these two provers providing exactly the same results.

The Committee agreed to participate with the API Weights and Measures Committee in a joint effort for development of a uniform field test procedure and standard test report for loading-rack meters that meets the needs of both industry and weights and measures officials.

Conclusions

Tolerances on vehicle-tank, loading-rack, and other large-capacity meters used to measure products other than LPG-Liquid, agri-chemical, cryogenics, milk, and water should be revised and expressed in relative terms (% of volume delivered). This approach will recognize the variations in provers, prover calibration, and test methods, and the imperfection of temperature sensing equipment and atc's.

An advantage of expressing the tolerance in relative terms (%) is that provers could be graduated in terms of percentage or in tenths of a gallon and the tolerance applicable would always coincide with a graduation. This would eliminate the need to compute the tolerance in difficult to deal with "cubic inches", which generally produces a tolerance value between graduations requiring interpolation.

The following table lists the present and proposed tolerance values expressed in both cubic inches and in percentages so that a comparison can be made.

Indication (gallons)	<u>Acceptance Tolerances</u>					<u>Maintenance Tolerances</u>				
	<u>Present</u>		<u>Proposed</u>			<u>Present</u>		<u>Proposed</u>		
	cubic inches	%	cubic inches	gal- lons	%	cubic inches	%	cubic inches	gal- lons	%
50	25.0	.216	23.1	.1	.2	50	.433	34.65	.15	.3
100	37.5	.162	46.2	.2	.2	75	.325	69.30	.3	.3
200	62.5	.135	92.4	.4	.2	125	.271	138.60	.6	.3
500	137.5	.119	231.0	1.0	.2	275	.238	346.50	1.5	.3
750	200.0	.115	346.5	1.5	.2	400	.231	519.75	2.25	.3
1000	262.5	.114	462.0	2.0	.2	525	.227	693.00	3.0	.3
1500	387.5	.112	693.0	3.0	.2	775	.224	1039.50	4.5	.3

A tolerance not included in the table is that applicable to special tests. The present tolerance for special tests is specified as 1 cubic inch per indicated gallon. Expressed in relative terms it is .433%. It seems that this value could reasonably be .5%, and simplify the entire process without any loss in equity.

In applying these tolerances, two important principles must be kept in mind; (1) when equipment is adjusted, it should be adjusted as close to zero as possible and (2) a device owner is not to take advantage of any tolerance by maintaining his equipment at or near the tolerance limits.

Tolerances on LPG-Liquid Measuring Devices, Vehicle-tank, Loading Rack and Other Large-Capacity Meters

With respect to tolerances on this equipment, a recommendation was received that the tolerances should be the same on overregistration as on underregistration. The present maintenance tolerances are specified as 4 cubic inches per indicated gallon on underregistration and 2 cubic inches per indicated gallon on overregistration. Expressed in relative terms this is 1.732% and 0.866% respectively, which is a range of 2.598%. If the tolerances were to be expressed in relative terms as well and to be of equal value on overregistration as underregistration, a value of $\pm 1.3\%$ would result.

A compromise that would provide some advantages in case of tolerance value determinations would be 1.0% overregistration and 1.5% underregistration.

A comparison of the present acceptance tolerances would be 0.866% and 0.433% respectively, which is a range of 1.299%. On the same basis as the example above for maintenance tolerances, it would seem that the values 0.5% overregistration and 0.75% underregistration, would be appropriate and equitable.

This approach would provide similar advantages for; (1) similar meters that measure other products and; (2) to prover design. The computation of tolerances, except those on milk meters, would be in relative terms, thus eliminating the use of cubic inches.

Further Work

Recommendations expressed under this item are far reaching. Therefore it is recommended that enforcement officials and affected industry representatives study the proposals expressed in this report during the coming year and collect field test data to determine the extent of the effects the proposals would have. Final recommendations for code amendments will be made at the next Interim Meeting in 1987.

330-6 REVISION OF ALL CODES DEALING WITH LIQUID-MEASURING DEVICES

All the comments received on the draft revision to the LMD Codes were reviewed. All comments were favorable with respect to the composition or format of the codes.

Although it was initially indicated that the draft was not intended to change any existing requirements as applied to any or all of the devices covered, some comments indicated that recommendations for changes may have gone beyond that limit. That is, some of the changes that were recommended would actually provide different requirements to a particular device. Other comments recommended different wording for particular paragraphs.

Some of these recommendations were worthy of further consideration and as a result, were dealt with separately as individual items included in this report.

Offering substantive changes in language or terminology to the draft for action by this year's Conference would be premature. Thus during the ensuing year a revised draft will be circulated with a request for comments prior to next year's Interim Meeting.

330-7 V REPORT OF THE NTETC - MEASURING INDUSTRY SECTOR

(This item was adopted)

This Committee met on Thursday, January 23, 1986. The decisions that were reached were reviewed and are recommended for adoption by NCWM.

The recommendations for changes to the Type Evaluation Handbook are as follows:

Specific Criteria: Retail Motor Fuel Dispensers-Selectable Unit Price Capability.

Amend part b. to read:

- b. A console may be equipped with means for selecting two or more unit prices, provided that after the unit price for a particular sale has been selected and "authorized"/"approved" by the console operator,**
- the selected unit price is made clearly evident on the dispenser, and,
- the unit price cannot again be changed by the operator on the console prior to or during the delivery, and
- the selected unit price displayed at the dispenser prior to the delivery of product, is continually displayed at the conclusion of the delivery (operating mechanism moved to the "off" position) for a time period not less than 30 seconds, or the start of the next transaction by movement of the operating mechanism to the "on" position, or "Authorized"/"Approved" by the console operator, whichever occurs first.

Change the third paragraph of part a. to read:

In a system where a base unit price is automatically displayed on the dispenser after the completion of a transaction, the dispenser may display the values for quantity, unit price, and total price that do not result in a mathematically correct equation, provided that when the total price value displayed is divided by the quantity value displayed, the result is a unit price that is "posted" for a particular kind of transaction.

Under Discount Pricing, delete paragraph c which reads:

c. A console shall be capable of switching back and forth repeatedly between the normal and discounted total prices.

Section 3.31. Vehicle-Tank Meters

331-1 VC CONFLICT BETWEEN DESIGN SPECIFICATIONS

(This item was adopted)

Clarification was requested concerning an apparent conflict between paragraph S.1.3.6. Travel of Indicator and paragraph S.1.2.3. Clear Interval Between Graduations.

Paragraph S.1.3.6. specifies that if the most sensitive element of a primary indicating element utilizes an indicator and graduations (i.e., it is analog) the relative movement of these parts for the smallest indicated value (minimum graduated interval) cannot be less than 0.20 inch.

Paragraph S.1.2.3. specifies that this clear interval cannot be less than 0.04 inch.

Paragraph S.1.2.2. Graduations/Width further specifies that the width of a graduation cannot be greater than the width of the clear interval between graduations. Thus, if the worst case design allowed by S.1.2.2. and S.1.2.3. were to be a graduation width of 0.04 inch and the clear interval between graduations were also 0.04 inch, the indicator would only travel 0.08 inch, which is significantly less than 0.20 inch as required by paragraph S.1.3.6.

There are similar requirements in the LMD Code applied to wholesale meters with the exception that the paragraph dealing with the travel of the indicator specifies that the 0.20-inch travel is only required for an indication of one gallon. In the LMD Code, there is no conflict since, if the value of the minimum graduated interval was less than one gallon, the 0.04-inch graduation width and 0.04-inch clear interval would apply to graduations having a value of less than one gallon.

Prior to 1965, the Travel of Indicator requirement of 0.20 inch was worded exactly the same for wholesale meters and for vehicle-tank meters; i.e., for a "one-gallon delivery." However, in 1965, this specification of 0.20 inch was changed in the Vehicle-Tank Meters Code from "one-gallon" to "the smallest indicated value."

To correct this apparent conflict, it is necessary to amend the Code for Vehicle-Tank Meters in a manner that reflects the intent of this Code for the last 20 years, i.e., the relative movement for the indication of a volume equal to the value of the minimum graduated interval should be at least 0.20 inch.

Amendment to the Code is recommended as follows:

Amend paragraph S.1.2.3. Clear Interval Between Graduations by deleting the value "0.04 inch" and inserting the value "0.10 inch".

As a result of this change, the worst case condition that could be developed is a graduation width, clear interval width, and an indicator width each of 0.10 inch. Thus, the indicator would travel the required 0.20 inch for a delivery equal to the minimum graduated interval.

If the width of the clear interval were increased, since the graduation width is always dependent on the width of the clear interval (i.e., it cannot be greater) and the indicator width is also dependent on the width of the clear interval (it too cannot be greater), the travel would also be increased proportionately and be in excess of 0.20 inch.

A better design would seem to be a graduation and indicator width of 0.04 inch. Then, the resultant required clear interval width necessary for a 0.20 inch-travel would be 0.16 inch.

Section 3.32. LPG Liquid-Measuring Devices

332-1 V TEMPERATURE COMPENSATION

(This item was defeated)

A comment was received that a more equitable standard would result if all LPG liquid for sale in large amounts would be required to be sold on a "net" (temperature compensated) basis.

Code amendment as follows is recommended:

Amend paragraph S.2.6. to read:

S.2.6. AUTOMATIC TEMPERATURE COMPENSATION. - A device All devices with a maximum discharge rate greater than 20 gallons per minute shall may be equipped with an adjustable automatic means for adjusting the indication and ~~registration~~ recorded representations of the measured volume of product to the volume at 60 °F.

332-2 V A. APPLICATION

(This item was adopted)

A recommendation was received that this part of the code be amended so that it would also apply to meters used to measure anhydrous ammonia (NH

3) and carbon dioxide (CO₂).

This code seems appropriate for NH_3 but not for CO_2 . Paragraph A-2 would seem to indicate that it could be applied to NH_3 with the existing wording.

To make it clear, it is recommended that the title of the Code be changed to read:

**LIQUEFIED PETROLEUM GAS AND ANHYDROUS AMMONIA
LIQUID-MEASURING DEVICES.**

Amend A-1 as follows:

A.1. - This code applies to devices used for the measurement of liquefied petroleum gas and anhydrous ammonia in the liquid state, whether such devices are installed in a permanent location or mounted on a vehicle.

Safety precautions in the handling and testing of these products should be included in the NCWM training modules.

332-3 VC S.2.7.1. ZERO-SET-BACK INTERLOCK

(This item was adopted)

This paragraph has been the subject of discussion by the NCWM for the last several years. The principle expressed in this requirement is appropriate and should be applied. Recognizing that many devices used for dispensing LPG for motor fuel had been installed without this capability, it had been recommended that each weights and measures jurisdiction communicate with the industry and develop some sort of acceptable plan for the orderly conversion of such equipment.

Not much progress has been made, principally because the costs of this conversion are relatively high and the chances for by-passing the interlock are relatively small when filling LPG tanks. It is recommended to:

Delete Paragraph S.2.7.1. Zero-Set-Back Interlock

332-4 COMPUTING TYPE DEVICES

In response to a suggestion made last year, this code as it applies to computing type devices, was amended to make it consistent with the vehicle-tank meters code and the LMD code as it applies to motor fuel dispensers.

The recommendation that this be done was adopted by the NCWM. An editorial error resulted in paragraphs S.1.4.3., S.1.4.4., S.1.4.4.1., S.1.4.4.2., and S.1.4.4.3. being added to the code under S.1.4. For Retail Devices Only. Unfortunately, in the LPG LMD Code, a vehicle tank meter is also a retail device and these paragraphs are only intended to apply to devices of the motor fuel dispenser type.

This situation will be editorially corrected in the 1987 Handbook 44.

Section 3.33 LPG-Vapor-Measuring Devices

333-1 VC A. APPLICATION

(This item was adopted)

A suggestion was received that application paragraph A.1. be amended to include vapor meters used for the measurement and delivery of natural and manufactured gas.

Change the title of this Code as follows:

HYDROCARBON GAS LPG VAPOR-MEASURING DEVICE (Amended 1986)

Amend A.1. as follows:

A.1. - This code applies to positive displacement devices used for the measurement of ~~liquified-petroleum~~ hydrocarbon gas in the vapor state such as propane, propylene, butanes, butylenes, ethane, methane, and any other hydrocarbon gas/air mix.

Section 3.34. Cryogenic Liquid-Measuring Devices

334-1 V ON-BOARD WEIGHING SYSTEMS

(This item was adopted)

A comment was received that there are on-board weighing systems (a truck equipped with load cells connected to a digital indicator) that could be used for the measurement and delivery of cryogenics. It was further stated that these devices perform with smaller tolerances than the tolerances for meters measuring cryogenics. It was recommended that this code be amended to provide for such a measurement system.

Any measurement system that can perform within the tolerances specified for cryogenics is appropriate for that use. However, at first it was felt that since this measurement system is a scale it should be recognized in the scales code. The problem is that the scales code only recognizes Class III scales as appropriate for commercial use. This does not seem equitable in this instance since the tolerances on cryogenic meters are $\pm 1\frac{1}{2}\%$ acceptance and $\pm 2\frac{1}{2}\%$ maintenance.

This system should be recognized in the Cryogenics Code.

Amend A.1. to read:

A.1. - This code applies to cryogenic liquid measuring devices used for the measurement of the cryogenic liquid oxygen, nitrogen, and argon, whether such devices are installed in a permanent location, or mounted on a vehicle, or mounted on a portable tank.

Add a new paragraph to read:

S.4. LEVEL CONDITION, ON-BOARD WEIGHING SYSTEMS.-
Provision shall be made for automatically inhibiting the delivery of a cryogenic liquid when the vehicle is out of level beyond the limit required for the performance to be within applicable tolerance.

Renumber present S.4. to S.5.

Change the definition of cryogenic liquid-measuring device to read:

A system, including a mechanism or machine of (a) the meter or mass flow type, or (b) a weighing type of device mounted on a vehicle, designed to measure and deliver cryogenic liquids in the liquid state, by definite quantity whether installed in a permanent location or mounted on a vehicle. Means may or may not be provided to indicate automatically, for one of a series of unit prices, the total money value of the liquid measured.

Section 5.54. Taximeters

354-1 V

S.1.3. VISIBILITY OF INDICATIONS

(This item was adopted)

A comment was received that there were readily available component displays used for legends of 3.5 mm in height, whereas at the present time, 4 mm component displays were only available from one manufacturer. It was suggested that this paragraph be revised to accommodate these components.

Amendment of this paragraph is recommended:

S.1.3. VISIBILITY OF INDICATIONS. - Except when a taximeter is being cleared, The indications of the fare, and including extras, and the mode of operation, such as "time" or "hired", shall be clearly visible constantly displayed whenever the meter is in operation. at all times and at least 10 mm high for the fare and 4 mm high for all other indications.

Addition of a new sub-paragraph is recommended:

S.1.3.1. MINIMUM HEIGHT OF FIGURES, WORDS, AND SYMBOLS. -
The minimum height of the figures used to indicate the fare shall be 10 mm and for extras 8 mm. The minimum height of the figures, words, or symbols used for other indications including those used to identify or define shall be 3.5 mm.

354-2 VC

UR.2. POSITION AND ILLUMINATION OF TAXIMETERS

(This item was adopted)

It was recommended that this paragraph be amended as follows for clarity to specify that the indications referred to are those "of interest to the passenger."

UR.2. POSITION AND ILLUMINATION OF TAXIMETER. - A taximeter shall be so positioned and illuminated that its indications, operational markings, and controls of passenger interest can be conveniently read by a passenger seated in the back seat of the vehicle.

Section 5.55. Timing Devices Code

355-1 VC

T.1.1. TOLERANCES FOR LAUNDRY DRIERS AND CAR-WASH TIMERS

(This item was adopted)

The method of operation of the timers in use today with these devices was reviewed. Because of the design, it is necessary to recognize the possibility of a small amount of overregistration.

The heading of this paragraph seemed to limit the application of these tolerances to laundry driers and car-wash timers. Since these same timers are used with other equipment such as vacuum cleaners, coin-operated showers, and tire inflators, it was felt that this should be made clear in the title.

Code amendment as follows is recommended:

Amend T.1.1. to read:

T.1.1. FOR LAUNDRY DRIERS AND CAR-WASH TIMERS TIMING DEVICES OTHER THAN THOSE SPECIFIED IN T.1.2. AND T.1.3. - The maintenance and acceptance tolerances shall be:

- a. **on overregistration, no tolerance five seconds for any time interval of one minute or more; and**
- b. **on underregistration, six seconds per indicated minute.**

Section 5.56. Grain Moisture Meters Code

**356-1 V S.1.6.2. DESIGN OF DIRECT READING GRAIN
MOISTURE METERS/OPERATING RANGE**

(This item as amended was adopted)

An interpretation was requested of the phrase "clearly indicating" as it appears in this paragraph.

A draft tentative code first appeared in the report of the S&T Committee to the 66th NCWM 1981. The tentative code first appeared in H-44 1982 by action of the 67th NCWM 1982. This requirement appeared in the first draft and in the tentative code. In 1981, the Task Force stated that the draft code was intended to permit the use of most types of grain moisture meters presently in use. However, it went on to say that it strongly recommended the improvement and use of automatic devices in order to reduce the potential for errors in the measurement process.

By action of the 69th NCWM in 1984, the tentative code became permanent. However, paragraph S.1.6.2. was made nonretroactive as of January 1, 1985. Thus on January 2, 1985, all new moisture meters were to comply with this requirement.

Since there are many devices in use that do not meet this requirement, and the Committee is not convinced of the need for it, it is recommended to:

Delete paragraph S.1.6.2.

A motion to amend was defeated and the item was defeated. Thus, S.1.6.2. remains in H-44 unchanged. The Committee felt that this condition was not in the best interest of the Conference and did not reflect the wishes of the Conference.

During the next day's meeting the Committee Chairman was granted time to explain the result. He then moved to have the Report of the Committee reconsidered. This motion passed and a motion to reconsider this Item (356-1) passed. A motion was then made and adopted to amend paragraph S.1.6.2. as follows:

S.1.6.2. OPERATING RANGE. - Provision shall be made for clearly indicating when the operating range of the moisture meter has been exceeded (e.g. an indicating light, not display a moisture value, or to flash the displayed value). (Nonretroactive and enforceable as of January 1, 1985 1990)

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356-2 V N.1.2. MINIMUM TEST

(This item was adopted)

To clarify the intent of this paragraph it is recommended that this paragraph be deleted and replaced with the following:

N.1.2. MINIMUM TEST. - A minimum test of a grain moisture meter shall consist of tests:

- (a) with samples of each grain or seed for which the device is used (need not exceed three), and**
- (b) with samples having at least two different moisture content values within the operating range of the device.**

Other Items

360-1 W SMALL UTILITIES METERS

This item was deleted from the interim report pending further deliberations.

360-2 NBS H-105-1, 2, AND 3

There is a need for each of these publications to be updated. A priority is assigned for revising H-105-3 dealing with metal volumetric provers because of the problems with bottom loading. NBS in cooperation with industry representatives will be conducting a study during 1986, so that recommendations can be made for prover design appropriate for use when testing bottom loaders. The help extended by the API Committee in addressing this issue is appreciated.

Design and performance specifications for LPG liquid displacement provers have been developed and are available from OWM. These will be included in the revised H-105-3.

It is expected that a draft revision will be circulated for review in early 1987.

360-3 VC REVIEW OF NONRETROACTIVE REQUIREMENTS IN FORCE 10 YEARS OR LONGER

(This item was adopted)

Seven nonretroactive requirements that have been in effect for 10 or more years were reviewed. The following paragraphs should be changed to retroactive status:

LMD Code

S.2.2. Provision For Sealing (20 years)

VEHICLE TANK METERS CODE

S.2.2. Provision for Sealing (20 years)

LPG LMD CODES

S.2.2. Provision for Sealing (20 years)

LPG VAPOR-MEASURING DEVICES CODE

S.1.1.2. Units.

The last paragraph required that these devices indicate in cubic feet or cubic meters and was adopted in 1972 on a nonretroactive basis but to become retroactive on January 1, 1987. A proviso was included requiring marketers to bring existing equipment into compliance at the rate of 15 percent every 2 years. Since there have been seven 2-year intervals, all of these devices should now be in compliance.

360-4

EDITORIAL CHANGES TO HANDBOOK 44

The following editorial changes to H-44 are recommended:

- (a) Introduction presently numbered 1.10. will appear as the Introduction without any numerical designation.
- (b) Present Sections 1.11. FUNDAMENTAL CONSIDERATIONS, 1.12. UNITS AND SYSTEMS OF WEIGHTS AND MEASURES, and 1.13. TABLES OF WEIGHTS AND MEASURES, will be included as annexes at the back of the publication without any numerical designation.
- (c) Section 1. will contain the General Code numbered 1.10. GENERAL CODE.
- (d) The definitions of terms will remain at the end of each Code and will be designated as D. Definition of Terms. In the Introduction, Part 4, System of Paragraph Designation, this reference will be included.
- (e) All references to increments, graduations, etc. to be changed to scale divisions.

360-5

GRAIN TEST SCALES

The Scales Code was amended in 1979 by adding additional requirements applicable to grain test scales. Paragraph T.3.5. was added setting forth tolerances on the same principle as those in the 1986 Scales Code. UR.1.2. was added to establish values for "d" and "n" for Class II and Class III scales, similar to what is presently in Table 3, Accuracy Classes.

The two classes specified (Class II and III) and the related tolerances were consistent with what was being considered applicable to all scales at that time. When the new scale tolerances and accuracy class designations were adopted, the tables had been revised. Since the new tables were somewhat less stringent for Class II and Class III scales, no reference was made in the Scales Code applying to the few grain test scales produced and placed in service during that interval.

Specifications and Tolerances Committee

This was not an omission, but was intentional with the consideration that all grain test scales, including those placed in service prior to 1986, should be designed and the tolerances to be applied should be those of the new Scales Code for marked devices. This action was considered to be equitable to all parties concerned.

F. Gerk, New Mexico, Chairman

R. Andersen, New York

K. Butcher, Maryland

R. Probst, Wisconsin

D. Watson, City of Forth Worth, TX

O. Warnlof, NBS, Technical Advisor

COMMITTEE ON SPECIFICATIONS AND TOLERANCES

Appendix A

(See Appendix A to Report of Committee on Specification and Tolerances, Report of 70th National Conference on Weights and Measures, 1985, pages 131-143.)

Additions and Amendments to the Type Evaluation Handbook

1. Add a foreword or preamble to Test Procedures to include:
 - a. A general reference to International Electrotechnical Commission (IEC) Test Methods.
 - b. "Good Laboratory Practices" are to be followed with respect to the supplemental measuring equipment used (e.g. thermometers, hygrometers, timing device, etc.) and in the conduct of tests.
2. Amend Temperature Test as follows:

Pre-Test Determinations

3.3. Except for zero-setting, not to be adjusted or readjusted at any time during the test.

3.4. AZSM operable if so equipped and appropriate for the intended use of the device. If AZSM is selectable or variable, test at the minimum level (0.0d, 0.6d, 1d, or 3d).

4.2. Moisture content of the test atmosphere must not exceed 50% RH at test temperature.

Test

1. Place EUT in a climate chamber with the temperature at the mid-point of the temperature extremes and at a moisture content not greater than 50% RH, maintaining those conditions for three hours.

4. Increase temperature¹ to maximum specified and after temperature has stabilized² allow EUT to stabilize for at least three hours.

6. Reduce temperature¹ to minimum specified and after temperature has stabilized² allow EUT to stabilize² for at least three hours.

8. Increase temperature¹ to original temperature established in 1 above and after temperature has stabilized² allow EUT to stabilize for at least three hours.

¹ at a rate not to exceed 2 °F (1 °C) per minute.
² stabilization will be considered to have been achieved when the intended temperature has been maintained within +2 °F(1 °C) for a period of 10 minutes.

Specifications and Tolerances Committee

3. Amend Humidity Test as follows:

Under Purpose add the following: applicable to complete weighing devices and digital indicators only (not load cells)

Pre-Test Determinations

3.4. AZSM operable if so equipped and appropriate for the intended use of the device. If AZSM is selectable or variable, test at the minimum level (0.0d, 0.6d, 1d, or 3d).

Test

1. Delete the word "reference" in the first line.
4. Increase temperature to maximum specified and increase relative humidity to 93% (non-condensing).
5. Maintain conditions specified in 4 above for a period of four days with no load on the EUT.
6. Rezero if necessary and repeat steps 2, & 3 above.
7. Decrease temperature and relative humidity to values specified in 1 above and repeat steps 2, & 3.

4. Amend RFI Susceptibility Test as follows:*

Pre-Test Determinations

2. Signal Conditions:

2.1. When an indicating element is being evaluated it shall include the load transmitting component; i.e. a load cell.

2.2. The cable between the indicating element and the load transmitting component shall be installed per the submitter's instructions or mutually agreed to upon installation.

2.3. The power supply cable to the EUT shall be according to the manufacturer's specifications or mutually agreed to upon installation.

3.4. AZSM operable if so equipped and appropriate for the intended use of the device. If AZSM is selectable or variable, test at the minimum level (0.0d, 0.6d, 1d, or 3d).

7. Delete this part.

* This test is deleted as a result of the vote on Item 320-4, N.1.6.1., R.F.I. Susceptibility Tests that was defeated.

5. Amend Permanence Test as follows:

Pre-Test Determinations

- 5.1. 50% of maximum capacity, but need not exceed 500 pounds, applied so that it is distributed uniformly over the load points of the scale.
6. Add a test for load cells as specified in OIML IR #60 edited where necessary to conform to H-44. Since a humidity test is not specified in IR #60, request the USNWG for OIML PS7/RS8 to develop such a test.
7. Add a test for barometric pressure as specified in OIML IR #60 and applicable to load cells.
8. Add a tentative test for creep as specified in T.N.4.5. Time Dependence as follows:

Time Dependence Test

1. This test shall be conducted in a laboratory and is applicable to a complete scale.
2. At constant test conditions, the indication 20 seconds after the application of the load and the indication after 1 hour shall not differ by more than the absolute value of the applicable tolerance for the applied load.
3. The test shall be conducted at the temperature extremes specified for the EUT.
4. The load applied to a scale shall be between 90% and 100% of capacity for scales with capacities of 2000 pounds or less. For scales with capacities greater than 2000 pounds, the rule of 2000 pounds as applied to Influence Factor Testing applies; i.e. the load cell or load cells shall be tested individually.
9. Under Weighing Systems, Scales and Weighing Elements Greater than 30 000-pound Capacity. A CC will apply to all models having:
- Add: (c) weighing elements in which the span between sections is not greater than 120% of the equipment evaluated.
- Change present (c) to (d).
10. Under Weighing Systems Scales and Weighing Elements of 30 000-pound Capacity or Less. -

Specifications and Tolerances Committee

Add the following footnote:

¹ If the range of capacities is quite narrow (e.g., 50 pounds, 100 pounds, 200 pounds, and 500 pounds) it may be that only a device near mid-range capacity need be submitted. If the range of capacities is extremely wide (e.g., 10 pounds to 10 000 pounds) it may be necessary that a device near mid-range capacity also be submitted.



When more than one device is submitted it may not be necessary to submit each device to the entire test regimen; e.g. permanence, influence factors, etc.

11. Add the following Test Procedure for Portable Axle-Load Weighers.

1. Position tests.
Place 10 000 pounds (or the maximum test load that can be safely applied - not to exceed scale capacity) on at least two positions of each weighing element along the path of normal wheel travel. The results must be within acceptance tolerance. Repeat these tests three times.
2. Individual weighing element test.
Conduct three increasing load tests up to the capacity of the device with the test load distributed. Conduct three decreasing load tests. The results must be within acceptance tolerance.
3. Combination tests.
Place 40 000 pounds (or the maximum test load that can be safely applied - not to exceed scale capacity) distributed equally between the two weighing elements. Only one test is required. The results must be within acceptance tolerance.
4. Permanence test.
The devices shall be placed in "normal" service for 20 to 30 days. The tests described in 1, 2, & 3 above will then be repeated. The results must be within acceptance tolerance.

12. Add the following criteria for accuracy class marking.

- a. On all scales manufactured after January 1, 1986
- b. On or adjacent to the information required by G-S.1. or on the face of the indicating element
- c. The roman numerals such as II, III, IIIL, or IIII are required.

- d. If these numerals are within a geometric design, this design shall be either an ellipse , or within two horizontal lines connected at each end with a half circle ().
 - e. The word "class" is optional.
 - f. Since all vehicle, axle-load, livestock, and railway track scales, are considered to be Class III L, an indicator may be marked III/IIIL. When an indicator so marked is tested in the field, the tolerance (whether III or IIIL) will be applied according to the application.
13. Under G-S.6., delete paragraph 3 and insert the following:
- 3. The means used to indicate "motion" or a "stable" condition (these means are not required) can be combined with another function, provided each is properly identified.
14. In the Grain-Test Scale Section, amend part 8 to read:

Grain Test Scales

8. For FGIS applications, the following requirements must be satisfied.

- (a) To calculate and display percent values, the verification scale division cannot exceed 0.01 g for loads up to 120 g and 0.5 g for loads in excess of 120 g through 1 000 g.
- (b) The percent values shall be rounded and displayed to at least 0.01 percent.
- (c) To calculate and display test weight values, the verification scale division cannot exceed 0.5 g.
- (d) For official weighing, the FGIS has three categories of electronic laboratory scales used as grain test scales: precision, moisture, and general. The accuracy classes and scale divisions used for these scale categories shall not exceed those given in the following table.

Category	Accuracy Class	Scale Division
Precision	II	e 0.01 g
Moisture	III	d 0.1 g
General	III	d 0.5 g

Note: For Class III scales, $e \leq d$.

List the models and capacities that satisfy the requirements for each category.

15. Add a tentative Performance Test for Railway Track Scales as follows:

Performance Tests
Railway Track Scales - Used To Weigh Staticly

Performance tests are tests conducted to determine compliance with the tolerances and, in the case of nonautomatic indicating scales, the sensitivity requirements specified in NBS Handbook 44. The tests described here apply primarily to the weighing element. It is assumed that the indicating element used during the test has already been examined and found to comply with the requirements applicable to it. If the design and performance of the indicating element is being determined during the same test, the applicable requirements for weighbeams, poises, dials, electronic digital indications, etc. must also be referenced.

Influence Factors

If tests are necessary to determine compliance with influence factors, individual main elements and components tests must be conducted according to NTEP Policy.

Test Standards

A minimum of 100 000 pounds of known test weights shall be used, generally in increments of 10 000 pounds.

Sensitivity and Discrimination Tests

Weighbeams:

The sensitivity test is conducted at zero load and at maximum load. The sensitivity test is conducted by determining the actual test weight value necessary to bring the beam from a rest point at the center of the trig loop to a rest point at the top and at the bottom of the trig loop. The maximum load at which the sensitivity test is conducted need not be comprised of known test weights.

Digital Indications:

Width of zero, zone of uncertainty, and automatic-zero-setting mechanism (if so equipped) tests shall be conducted as specified in other sections of this Handbook.

Increasing Load and Section Tests

1. With the test car immediately adjacent to one end of the scale, remove weights from car and place on end (closest section) of scale. Observations shall be made at 30 000-, 40 000- and 50 000-pound test loads.¹ Additional observations are then made with the 50 000-pound test load located as nearly as practicable over each section and midway between sections of the scale. Remove test load from farthest section, record any zero balance change, rebalance if necessary, and repeat this test moving the weights in the opposite direction. When the weights have been returned to the near section, apply additional loads, making observations in increments equal to the value of each test weight (10 000 pounds) up to 100 000 pounds². Repeat tests over each section, and midway between sections in both directions.

Strain Load Tests

Place the test car (without test weights) on the scale so that the test load can be placed on one end section, and observe the weight to the smallest increment practical. Add test load to end section. If practical, repeat this test on other end section. Remove test load, observing any balance change, then remove test car.

Place test car on the platform so that the weights can be incrementally loaded from the dolly which remains off the platform. Observe weight to the smallest increment practicable. Load test car and observe weight indications in increments equal to each added test weight (10 000 pounds). At this maximum load, sensitivity and discrimination tests should be conducted.

The results of all observations shall be within acceptance tolerance.

Permanence Test

The permanence test shall be conducted after 20 and before 30 days, after the successful completion of the initial performance test. It is recommended that the performance tests described above be repeated. However, if the original test car is not available, the test may be conducted with at least two composite test cars.

The results of this test must be within acceptance tolerance.² If the device does not meet these tolerance limits, the entire test regimen must be repeated.

¹ Do not exceed sectional capacity.

² If the subsequent performance test cannot be completed, within 30 days because of the unavailability of test cars, maintenance tolerance will be applied.

Specifications and Tolerances Committee

16. Under "Computing scales with sales accumulation capability" change to read:
 1. When an itemized receipt is not provided, the scale shall:
 - (a) indicate the "number" of items accumulated with any display of accumulated subtotal or total prices.
 - (b) not indicate any weight values when there is a display of accumulated subtotal or total prices.
 2. When an itemized receipt is provided, the scale:
 - (a) need not continuously display the "number" of items accumulated,
 - (b) need not display the total "number" of items accumulated in the total price,
 - (c) may display an item price of a non-weighed item, after it has been entered into the accumulated total.
 3. Non-weighed items may not be entered when there is a load on the platform.
 4. If the device can simultaneously accumulate transactions for more than one customer, operator identification must be displayed and recorded if equipped to record.

**REPORT OF THE COMMITTEE ON
EDUCATION, ADMINISTRATION, AND CONSUMER AFFAIRS**

Thomas F. Geiler, Chairman
Sealer of Weights and Measures
Town of Barnstable, Massachusetts

REFERENCE

KEY NO.

400 INTRODUCTION

The Committee on Education, Administration, and Consumer Affairs submitted its Final Report to the 71st Annual Meeting of the National Conference on Weights and Measures (NCWM). The Report consisted of the Interim Report offered in the "NCWM Program and Committee Reports" as amended by the Addendum Sheets issued during the Annual Meeting.

The Report was adopted in its entirety by a hand vote of the membership.

Table A identifies all of the items contained in the Report by Reference Key Number, Item Title, and Page Number. All items are informational and required no formal action of the membership.

Table A
REFERENCE KEY ITEMS AND INDEX

Reference Key No.	Title of Item	Page
401	REGIONAL WEIGHTS AND MEASURES ACTIVITIES	4-2
402	NATIONAL TRAINING PROGRAM (NTP)	4-2
402-1	NTP Status Report	4-2
402-2	Future Funding	4-4
402-3	Review of Module 5	4-4
402-4	Waiver of Module Requirements	4-4
402-5	Status of NTP Registry	4-5
402-6	Certification Plan Implementation	4-5
402-7	Appointment of New Working Groups	4-5
402-8	Revision of Training Modules	4-6

Education Committee

In addition, the Report contains two appendices that are related to specific Reference Key Numbers as follows:

- | | | |
|----|--|------------|
| A. | NTP Registry Summary of Activity | Item 402-5 |
| B. | NTP Request for Individual Certification | Item 402-6 |

DETAILS OF ALL ITEMS (in order of Reference Key Number)

401 REGIONAL WEIGHTS AND MEASURES ACTIVITIES

The Committee reviewed and discussed the following reports:

1. The Final Report of the Education and Consumer Affairs Committee to the 28th Annual Technical Conference of the Western Weights and Measures Association (October 1985).
2. The Final Report of the Education Committee to the 40th Annual Conference of the Southern Weights and Measures Association (SWMA) (November 1985).
3. The Final Report of the Committee on Education, Administration, and Consumer Affairs to the 14th Annual Conference of the Northeastern Weights and Measures Association (NEWMA) (May 1986).

The SWMA Education Committee recommended the development of an NCWM training module on wheel-load weighers. It was noted by the Committee that these devices are already on the NCWM's list of proposed modules. Initiation of the module will be considered as funds become available.

The Committee discussed the importance of directly involving regional weights and measures associations in the development and evaluation of the National Training Program (NTP). The Committee encourages these groups to provide it with feedback on both the modules and the operation of the NTP. Specific key issues concerning the NTP will be identified by the Committee for consideration by the Education Committees of the regional groups.

NATIONAL TRAINING PROGRAM (NTP)

402-1 NTP Status Report

Table B represents the status of all training modules published or under development as of July 20, 1986.

Table B

TRAINING MODULE STATUS REPORT

<u>Module Number</u>	<u>Subject</u>	<u>Status</u>
1	Mechanical Computing Scales	Project completed.
2	Electronic Computing Scales	Project completed.
3/4	Bench/Counter and Medium- and Large-Capacity Scales	The working group draft is being reviewed by the Education Committee.
5	Vehicle and Axle-Load Scales	The module was field tested by the state of Virginia. The contractor is preparing the final copy of this module.
6	Monorail Scales	The contractor delivered the final copy of this module.
7	Livestock and Animal Scales	The module was field tested by the state of Ohio and reviewed by the Packers and Stockyards Administration.
8	Retail Motor Fuel Dispensers	Project completed.
10	Package Checking	Project completed.
13	Hopper Scales	The working group draft is being reviewed by the Federal Grain Inspection Service.
19	Loading-Rack Meters	Work on this module was postponed because of the possibility of changes in the test procedures for these meters.
20	Vehicle-Tank Meters	The contractor is preparing the final copy of this module.

Education Committee

Table B, continued

<u>Module Number</u>	<u>Subject</u>	<u>Status</u>
21	LPG Liquid Meters	A field test draft of the module is being prepared by the contractor.
23	Weights and Measures Admin.	OWM is rewriting portions of this draft module.
27	Electronic Weighing and Measuring Systems	Project completed.

Copies of NCWM Training Module No. 2, Retail Computing Scales --Electronic, were sent to the following to determine the reaction of industry to the training modules: Thomas L. Morrow, TEC America, Inc.; W. Terry James, Cardinal Scale Manufacturing Co.; and Edward Bratle, NCR Corp. The reaction of the reviewers was very positive. It was reported that the module contained information of use to personnel concerned with product design and production, field service, marketing, and sales.

402-2 Future Funding for the NTP

The Committee met with the NCWM Executive Committee during the interim meetings and explored various possibilities for obtaining funding to support the future development of the National Training Program. The Committee subsequently submitted recommendations concerning future annual funding sources to the Executive Committee for consideration.

402-3 Review of Module 5

This item was withdrawn because of the progress made on the development of the Module.

402-4 Waiver of Module Requirements

The Committee discussed a proposal made by Carroll Brickenkamp to waive certain requirements for Module 10, Checking the Net Contents of Packaged Goods, for past participants in H-133 Seminars sponsored by the NBS Office of Weights and Measures. It was the feeling of the Committee that the OWM seminar has changed significantly over the years and has varied considerably in length; consequently, it would be a disservice to weights and measures officials for the Education Committee to discourage supervised training in accordance with the current module. The Committee now permits participants in module field tests to obtain Continuing Education Units (CEU's) without retaking a module after it has been published in final form. The field test copy is, the Committee believes, the earliest version of a module that can be considered as a basis for granting CEU's.

The Committee also considered a suggestion that individuals who complete modules on a self-study basis and pass supervised exams be given credit for the modules. The Committee decided that CEU's could not be granted under those circumstances because NCWM modules are not designed to be self-study courses - they are designed so that the course instructor plays an important role in the learning process by sharing his/her experiences, demonstrating correct procedures, and providing detail on specific requirements of the jurisdiction. It was suggested that states that can not afford to provide lodging for a group of individuals from all over the state who are taking a class lasting 3 or 4 days might consider sending an instructor into the field to train groups of individuals on a regional basis.

402-5 Status of NTP Registry

A summary of the information contained in the National Training Program Registry as of July 1, 1986 is provided in Appendix A. The Registry serves as a permanent record of NCWM courses successfully completed and Continuing Education Units earned under the NTP.

402-6 Certification Plan Implementation

It was reported that as of July 20, 1986, 19 states and the District of Columbia had signed a Letter of Agreement with the NCWM and had been accepted as participants in the NTP Certification Program: Alabama, Alaska, Arkansas, District of Columbia, Georgia, Illinois, Louisiana, Maine, Massachusetts, Michigan, Missouri, Montana, New Hampshire, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Dakota, and Utah. states that have not sent in a Letter of Agreement form are encouraged to do so. The forms are available from the NBS Office of Weights and Measures.

The Committee discussed the type of information that should be submitted by states requesting certification of their inspectors under the NTP. A form designed to collect the desired information was developed by the Committee (see Attachment 2). Included on the form is a statement of the Committee's policy with regard to waiver of part of a module's requirements for field training in the case of experienced inspectors who complete the other portions of a module.

A total of 19 individuals (17 from Arkansas and 2 from Missouri) have been certified under the National Training Program.

402-7 Appointment of Working Groups

The Committee decided not to appoint any new working groups until it was assured that funding could be obtained to complete new projects.

Education Committee

402-8

Revision of Training Modules

The Education Committee has adopted the following plan for revising the published training modules:

Format

Change pages will be prepared. The date of the revision (month and year) will appear in the top right-hand corner of each page of the revision.

Preparation and Review of Changes

Change Pages will be prepared by OWM staff and reviewed by the Education Committee prior to issuance.

Revision Schedule

The existing modules will be revised on the following schedule:

Module 27 - October 1986
Modules 1 & 2 - November 1986
Module 10 - March 1987
Module 8 - April 1987
Module 6 - May 1987

Distribution

One set of changes will be distributed to the state offices of weights and measures. It is the Committee's intention to send copies of the change pages to all of the purchasers of the modules as long as it is economically feasible to do so. At some point, it may be necessary to charge a small fee to cover the expenses of such distribution.

T. Geiler, Town of Barnstable, MA, Chairman

C. Greene, New Mexico
B. Niebergall, North Dakota
T. Scott, North Carolina
P. Stagg, Louisiana

J. Koenig, NBS, Technical Advisor

COMMITTEE ON EDUCATION, ADMINISTRATION, AND
CONSUMER AFFAIRS

Appendix A

National Training Program Registry
Summary of Activity
(as of July 1, 1986)

Courses Listed:

1. Module 27, Introduction to Electronic Weighing and Measuring Systems
2. Module 10, Checking the Net Contents of Packaged Goods
3. Module 1, Retail Computing Scales - Mechanical
4. Module 2, Retail Computing Scales - Electronic
5. OWM 0201, Basic Metrology I
6. OWM 0202, Basic Metrology II
7. OWM 0203, Intermediate Metrology

No. of Individuals Trained Under the NTP:

State or Other	Module No.			Totals
	<u>1</u>	<u>10</u>	<u>27</u>	
AR	17			17
FL	1		30	31
HI		14	4	18
IN			48	48
KS		8	8	16
LA		1		1
MI		23	52	75
MO		2	22	24
MT			8	8
NE			1	1
NJ			101	101
NM		13		13
ND			12	12
OK		19	2	21
P&S			3	3
(USDA)				
PA			58	58
SD			10	10
UT			14	14
VA		38		38
WI			63	63
WY			3	3
Totals	18	118	439	575



REQUEST FOR INDIVIDUAL CERTIFICATION
Under the National Training Program

Part I. General

1. Name of Individual Recommended
for Certification: _____
2. No. and Title of NCWM Training Module: _____

Part II. Classroom Training

3. Date of Completion: _____
4. Score(s) on Final Exam: _____
5. Instructor: _____

Part III. Field Training

6. a. No. of Hours of Field Training: _____

b. In the case of individuals with previous field experience in the area covered by the module for which certification is being requested, the field training portion of a module may be shortened or waived; however, a final evaluation of the individual's performance in the field must be made by a qualified official and a determination made that the individual meets all requirements of the module before the individual may be recommended for certification. If field training was not conducted as described in the module, justify below:

7. Field Training Supervisor/Evaluator: _____

Part IV. Recommendation of State Certifying Officer

I attest that the individual named above has successfully completed classroom and field training in accordance with the module indicated, and I recommend that certification be granted under the National Training Program of the National Conference on Weights and Measures.

Signature of State Certifying Officer

Date

Typed Name and Title of Certifying Officer

Education Committee

Instructions for Completing the Request for Certification Form

Item No.

1. - Fill in the name of the individual being recommended for certification as it should appear on the certificate.
2. - Fill in the number and title of the NCWM training module for which certification is being requested.
3. - Specify the date the individual completed the classroom training portion of the module.
4. - Give the individual's score on the final exam. If the module's criteria for successful completion specify different requirements for different parts of the exam, include the individual's score on each part of the exam.
5. - Fill in the name of the individual who taught the classroom portion of the module.
- 6a. - Give the estimated number of hours that the individual spent in field training following completion of the classroom portion of the training; include time spent under direct supervision and indirect supervision.
- 6b. - Complete this section if any part of the field training portion of the module was waived.
7. - Enter the name of the individual's supervisor during the field training portion of the module or the name of the official who conducted the final field evaluation of the individual being recommended for certification, as appropriate.

The completed form should be signed and dated by the State Certifying Officer and then sent to: NCWM Executive Secretary, P.O. Box 3137, Gaithersburg, MD 20878. The Executive Secretary will have a certificate prepared and signed by the NCWM Chairman. The certificate will be sent to the State Certifying Officer for signature. The State Certifying Officer will be responsible for distributing certificates to the individuals concerned.

REPORT OF THE COMMITTEE ON LIAISON

N. David Smith, Chairman
Director, Standards Division
North Carolina Department of Agriculture

REFERENCE KEY NO.

500 INTRODUCTION

The Committee on Liaison submitted its Final Report for consideration by the National Conference on Weights and Measures. This report resulted from consideration of all communications received by the Committee prior to and during its Interim Meeting at the National Bureau of Standards, January 21 - 24, 1986 and discussions at the Annual Meeting.

Reference Key Number, Item Title, and Page No. are identified in Table A. All items were informational and required no formal action of the membership.

The report was adopted in its entirety by a hand vote of the membership.

Table A
REFERENCE KEY ITEMS

Reference Key Number	Title of Item	Page
<hr/>		
FEDERAL AGENCY ACTIVITIES		
501-1	Federal Grain Inspection Service	5-3
501-2	Aerosol Net Weight Labeling	5-4
501-3	Random Pack Quantity Statement to 0.001 lb	5-4
501-4	Credit Card Surcharge	5-4
501-5	Federal Role in Net Weight Compliance	5-5
502	PUBLIC LIAISON	5-6
503	OIML ACTIVITIES	5-6

Table A, continued

Reference Key Number	Title of Item	Page
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DETAILS OF ALL ITEMS
(in order of Reference Key Number)

FEDERAL AGENCY ACTIVITIES

501-1 FEDERAL GRAIN INSPECTION SERVICE

The Federal Grain Inspection Service (FGIS) reports the following activities for 1985:

- The new test car routing plan resulted in all 14 master scales being tested and approved by the appropriate weights and measures jurisdictions.
- The Los Angeles County Master Scale remains out of service and no indication has been given by Los Angeles County officials on what action, if any, is being taken to return the scale to service.
- FGIS conducted 82 scale tests on 41 railroad track scales used for the official weighing of grain. In addition, 4 railroad-owned track scales and 4 railroad track scales owned by other industries were tested.

Liaison Committee

- Two test car field calibrations for the grain industry, 4 for the railroads, and 1 for other industry were conducted.
- At the FGIS Master Scale Depot in Clearing, Illinois, 26 railroad-owned test cars were tested, and sixteen 2500-pound test weights (Cargill) and four 3750-pound piggy-back weights (Continental) were tolerance tested with the state of Indiana providing certification.
- Considerable capital improvements were made to the Clearing facility which indicates a commitment by FGIS to maintain the facility.
- A fourth test weight certification beam has been obtained from the state of Wisconsin; there now are four weighbeams located in strategic areas of the country (Baltimore, Maryland; Chicago, Illinois; New Orleans, Louisiana; and Portland, Oregon).
- A summation standard (50-pound test weights) has been put into service in the Chicago and Duluth - Superior areas.

Mr. Richard R. Pforr, Acting Chief, Equipment Branch, Field Management Division, also reported that FGIS is willing to participate in the NTEP program for the testing of railroad track scales. However, such tests will require at least an 8-week notice.

501-2

AEROSOL NET WEIGHT LABELING

Because 1980 the National Conference on Weights and Measures has petitioned FDA to change its labeling requirements for net contents from a volume or net weight measurement to a net weight only measurement. FDA has responded that it has no objection to this change and is preparing a notice of a proposed regulation for the Federal Register. Howard Pippin of the FDA reported that a draft of the proposal was in his office preparatory to going to the Office of the Associate Commissioner for Regulatory Affairs, FDA. There are a number of review steps within the Department of Health and Human Services as well as the Office of Management and Budget before the proposal can be published. Since these clearances are outside of FDA, Howard Pippin was not able to give an estimate of when the proposal could be published, but he did indicate that he did not expect any controversy over the proposal.

501-3

RANDOM PACK QUANTITY STATEMENT TO 0.001 lb

The National Conference on Weights and Measures has petitioned the FDA and the USDA to permit the labeling of net weight statements to three decimal places, e.g., 0.001 lb, rather than the currently required two decimal places. FDA replied that the Fair Packaging and Labeling Act requires that net weight declarations be to two decimal places. Because FDA products are regulated by this act, FDA would not be able to change its policy without a change in this law.

The products that USDA regulates, meat and poultry products, are not covered by the same law. However, USDA does have regulations that would have to be changed to permit three decimal place labeling. USDA has indicated that it is willing to propose a change in its regulation, so long as the change permits firms to voluntarily declare their net weight statements to either two or three decimal places. USDA will not require the change. Because this requirement would impose an unreasonable cost on many firms. John McCutcheon of USDA indicated that the Federal Register proposal allowing two- or three-decimal place labeling should be published by September 1986.

501-4

CREDIT CARD SURCHARGE

At the present time, there are no Federal requirements limiting credit surcharges, since the ban on such surcharges expired on February 27, 1984.

Various bills are pending in Congress but neither the House nor Senate has been able to agree on legislation to either extend the surcharge ban or sanction such surcharges.

According to Gerald Hurst of the Consumer Affairs Office of the Federal Reserve Board, some states are passing legislation concerning surcharges. 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 posting that relates to the credit surcharge issue.

At the present time, California, Colorado, Massachusetts, New York, Oklahoma, and Texas have passed legislation banning credit card surcharges. Connecticut, Florida, Illinois, New Mexico, and Pennsylvania have legislation in the mill to ban credit card surcharges.

501-5

FEDERAL ROLE IN NET CONTENT COMPLIANCE

To obtain a better understanding of the net content compliance program followed by Federal agencies, the Liaison Committee invited the Federal Trade Commission (FTC) and the National Marine Fisheries Service (NMFS) to present their programs to the Committee. In addition, the FDA also commented on its position towards Handbook 133.

The Federal Trade Commission (FTC) was represented by Earl Johnson from the Commission's Bureau of Consumer Protection. Mr. Johnson indicated that FTC will conduct studies in the net weight area when the staff has concerns about particular products. Those studies will use Handbook 133 as a basis for the sampling plans. When deemed appropriate, the FTC staff will recommend policy statements to the Commission, but compliance is achieved in cooperation with the states. The FTC staff will recommend to a particular state that a problem be investigated since FTC does not have any compliance staff. Mr. Johnson said the adoption of Handbook 133 would only apply to the second edition because the FTC would have to evaluate the impact of any changes to the Handbook before the Commission could establish a position.

Liaison Committee

As noted in Item 230-3 of the Report of the Committee on Laws and Regulations, the Federal Trade Commission (FTC) commented in the March 25, 1986 issue of the Federal Register that the procedures contained in NBS Handbook 133, Second Edition are not in conflict with existing FTC requirements.

The NMFS program was presented by Rita Creitz, Program Analyst of the Inspection Services Branch. She indicated that the agency conducts a voluntary inspection service on a fee basis. The services include vessel and plant sanitation inspection, product evaluation, product specification and label review, and laboratory analyses. These services are available to any interested party, e.g., harvester, processor, food service distributor, importer, or exporter. Any type of product from whole fish to reconstructed product can be inspected and certified for grade. The analytical tests used are based on Association of Analytical Chemists (AOAC) methods.

Most of the services are provided to institutional suppliers and the grades assigned to the products are rarely seen by retail customers. Many large customers of fish products such as restaurants and hotels require their suppliers to be under the NMFS Inspection Program. The net content compliance requirement utilized by the Inspection Program is based on the average concept and states that the inspection sample average must be at or above the declared label quantity. At present, they do not specify or utilize industrial container limits such as the MAV's in H133. However, these will be considered in the future.

Howard Pippin of FDA said that FDA has not adopted Handbook 133 as a statistical basis for its compliance system. FDA intends to continue to use its existing statistical sampling plan and will not object to others using Handbook 133. The statistical sampling plan that FDA follows is such that any sample that passes either sampling plan A or B from Handbook 133 is virtually assured of passing the FDA's statistical sampling plan.

502

PUBLIC LIAISON

The Committee continues to support an effort to improve awareness and understanding of weights and measures problems and issues by directing weights and measures announcements and issues of concern to consumer leaders, trade associations, and other agencies. A member of the Committee and the Executive Secretary of the National Conference on Weights and Measures will continue to select the information and publications and contact these groups.

David Edgerly, U.S. Member of the OIML International Committee of Legal Metrology, reported active United States participation in OIML during 1985, citing representation from various NCWM standing committees on U.S. Delegations to OIML meetings and seminars covering bulk weighing systems, automatic weighing instruments, railway track weighing, test methods for weighing instruments, dynamic fluid measurement, and prepackaged products (labeling requirements and requirements for determining accuracy of quantity of contents declarations). He invited NCWM representation on U.S. Delegations to the following OIML meetings planned in 1986:

PS20/RS1&2	Prepackaged Products August 25-29, Switzerland
PS7	Harmonized Test Methods Weighing Instruments September 8-12, Finland
PS7/RS5	Automatic Weighing September 15-19, UK

Mr. Edgerly pointed out that the process developed with the NCWM for providing representation in OIML activities of interest to the weights and measures community is still effective and emphasized the importance of continuing to involve the Conference. He briefed the Committees on the status of the load cell intercomparison program and discussed the potential impact of this program on NTEP. He also indicated that any proposed changes to MAV's contained in NBS Handbook 133 would need to be reviewed in developing U.S. positions for the OIML PS20 meeting scheduled for August 1986. (The Committee on Laws and Regulations is not making recommendations to change H-133 this year.) He stated that his office would work with the NCWM and with representatives of other interest groups on the U.S. National Working Group for PS20, in achieving a unified position on this matter.

NCWM has designated three representatives to the OIML Technical Committee meetings on weighing instruments and prepackaged products. Fred Gerk (NM) will participate on the U.S. delegation to PS7/RS5 meeting on automatic weighing instruments. Ken Butcher (MD) will participate in PS7/RS4 meeting on non-automatic weighing instruments. Dick Thompson (MD) will participate in the PS20 meeting on prepackaged products.

OIML Net Content Proposal (SP20/SR1)

A preliminary evaluation of the net content compliance requirements contained in the OIML proposed (SP20/SR2) compared to those contained in Handbook 133 has been made. The provisions in the OIML proposal include:

1. Smaller allowances (tolerable negative error-TNE) for individual containers
2. Larger sample sizes
3. Acceptance of a larger number of containers (2) below the TNE
4. Larger allowances for the sample average to be below the label declaration

The comparison of OIML to H133 indicated:

1. The probability of lot acceptance under the individual container requirements (TNE) is less for medium sized containers (1 to 10 Pounds) with larger variability (standard deviation = 3% of label weight). Small (1 lb or less) and large (greater than 10 lbs) containers with large variability and all size containers with small variability (standard deviation = 1% of label weight) have the same or higher probabilities of lot acceptance than under H133.
2. The probability of lot acceptance under the requirement for the sample mean is the same or higher than under H133.
3. USDA evaluated the method proposed by OIML and has determined that the method, if completely adopted as proposed, could be a useful method for meat and poultry inspection.

From this preliminary comparison, the two plans (OIML and H133) appear to be similar, except for medium sized containers with large net content variability.

The next meeting of SP20/SR2 will be held in St. Gallen, Switzerland in August to finalize the provisions of its proposal.

504 OWM STATUS REPORT

Al Tholen, Chief, Office of Weights and Measures, reported on the status of the program of this office. The major change has been the addition of two new staff members in the office: Karl Neweli and Paul Krupenie.

Mr. Newell began his career at NBS in the weights and measures program. In recent years he has been a manager of information systems programs, including the Voluntary Standards Program. He is working in the area of weights and measures administration and will be working with the Executive Secretary to improve the operations of the National Conference on Weights and Measures through the use of computers. In regard to the latter, Mr. Newell has established computer links with the Chairman and Chairman-Elect. Among his new assignments, Mr. Newell has been assigned as the technical advisor to the Task Force on Information Systems.

Mr. Krupenie came from one of the NBS research laboratories. He is assuming the responsibilities for managing the State Laboratory Program including conducting the metrology seminars and supporting the regional measurement groups. As Mr. Krupenie works into his assignment, Mr. Oppermann will assume more responsibility for managing the National Type Evaluation Program including functioning as the technical advisor to the NTEP Technical Committee and the Board of Governors.

The OWM Program is healthy and the new staff will enable us to strengthen ongoing tasks and to begin work on new tasks.

505 RAILROAD FREIGHT CAR STENCILED TARE WEIGHTS

The Liaison Committee's Final Report to the 70th National Conference on Weights and Measures posed several questions to weights and measures officials regarding the elimination of stenciled railway freightcar tare weights and the increased use of the rail industry's UMLER file. John J. Robinson of the Association of American Railroads (AAR) responded to several of the Committees questions as follows:

- As to the accessibility of the UMLER file, Mr. Robinson reported that shippers and rail car owners can access UMLER data files via on-line inquiry devices, microfiche, and computer tape listings.
- Unauthorized and fraudulent entries are precluded by pass-key identification procedures.
- The expense of participating in the UMLER file is borne by the user, either through the cost of computer hardware or a monthly fee to obtain microfiche or computer tape listings. The UMLER information is non-proprietary and is currently available to any interested party.
- While the UMLER file contains vast amounts of information, shippers and rail car owners can only access selected UMLER data fields.

Liaison Committee

Based on Mr. Robinson's report, it does not seem practical at this time to advocate a totally computerized system. In fact, users of rail car tare weights expressed to the Committee their reservation about the elimination of stenciled tare weights. Even if a computerized file was practical and acceptable, the committee fails to see how the problem with light-weighted cars would be eliminated or even diminished.

The AAR reports that in 1985, 118,284 non-exempt cars were restenciled, or about 16% of the serviceable fleet of general service freight cars. In addition, 71,085 exempt cars, or about 8.4% of the fleet of specially equipped cars were reweighed, including 24,461 covered hoppers. The railroad industry continues to experience relatively flat economic conditions and, thus, reports that a large number of cars remain in storage with no effort being made to reweigh these cars.

506 THE 150TH ANNIVERSARY OF THE UNIFORMITY OF WEIGHTS AND MEASURES STANDARDS IN THE UNITED STATES

The Committee was not successful in obtaining a weights and measures stamp to commemorate the 150th anniversary of the establishment of the Office of Weights and Measures by the joint resolution of Congress in 1836. One of the reasons was there was insufficient lead time for getting a stamp for 1986. Many of the stamps for 1986 were already selected before a formal application was made. Another reason is that it is very difficult to get recognition of that type for a Government agency. Finally it was agreed that the request should be made by the weights and measures community through the National Conference on Weights and Measures and individually by the state and local jurisdictions, associate members, industry, trade associations, consumer groups, and all other friends of weights and measures and not by the National Bureau of Standards.

The Committee urges that all NCWM members contact members of the Citizen's Stamp Advisory Committee to approve a commemorative stamp for 1988. The Chairman of that Committee is Belmont Faries, Citizen's Stamp Advisory Committee, 475 L'Enfant Plaza, S.W., Washington, D.C. 20260-6352. The Committee on Liaison requests that any design ideas for stamps be sent to Peggy Adams, Chief Sealer, Bucks County Consumer Protection, Broad and Union Streets, Doylestown, PA 18901.

Because of the lead time needed to secure a commemorative stamp, the focus has been changed from the 150th Anniversary of OWM to the 150th Anniversary of the uniformity of weights and measures standards. As a result of the joint congressional resolution of 1836, the first standards were delivered to the states in 1838 (hence the term - "1838 standards"). This is when our nation first began to achieve uniformity in weights and measures standards and this is what should be observed rather than the establishment of OWM. This brings into the limelight the entire weights and measures community rather than a single Government agency.

The promotional plan will remain basically the same as outlined in the 1985 Final Report to the National Conference on Weights and Measures; however, the year of observance will be shifted to 1988, and the target of emphasis will be 150 years of uniformity of weights and measures standards in the United States.

507 TASK FORCE ON MOTOR FUELS

The Task Force on Motor Fuels met on January 20 and 21 to finalize work necessary to complete the Task Force's work. An open meeting was held on the proposed Uniform Motor Fuel Inspection Law and Regulation. Numerous firms and trade associations wrote in support of a specific vapor pressure exemption for ethanol-gasoline blends (gasohol). These groups are concerned that the proposed regulation may be interpreted as applying the ASTM P 176 volatility standards to the blended fuel and not to the base gasoline as is specified in a Clean Air Act waiver issued by the EPA for ethanol-gasoline blends. The Task Force concluded that such a specific exemption is not necessary since in Section 1.3 of P176 reference is clearly made to the Clean Air Act waivers of the EPA.

With the Task Force's work nearing completion, the proposed law and regulation was transferred to the Committee on Laws and Regulations. The Task Force is recommending that the proposals be placed on the agenda for the 1987 Interim Meetings for possible consideration by the 1987 NCWM. The year's delay will allow ASTM to confirm new test procedures for oxygenated fuels and the ethanol industry to gauge the impact of ASTM P 176.

In addition, the Task Force is developing the basics of a small (500 samples per month) fuels testing laboratory. Items to be listed are types of tests, equipment, number of personnel, building size, and yearly operating budget.

Prior to the 1987 Interim Meeting, the Task Force will conclude its assignment with a written report detailing the issues for the creation of the Task Force and the basis for the proposed uniform law and regulations.

508 LPG PROVING SYSTEMS

In response to a letter written by N. David Smith, Liaison Committee Chairman, Mr. James K. Walters, American Petroleum Institute, appeared before the Committee to discuss Chapter 4 of API Manual of Petroleum Measurement Standards.

Liaison Committee

The issue was that Chapter 4, "Proving Systems", did not recognize vapor-equalization volumetric provers which are commonly used by weights and measures jurisdictions, private meter repair firms, and LP-Gas dealers. These provers are used to test LP-Gas meters on vehicles that deliver LP-Gas to the consumer.

Mr. Walters stated that to his best information, it was a fault of omission since those working on Chapter 4 were mostly involved in bulk or pipeline metering, and vapor-equalization volumetric provers were not really suitable for high volume deliveries.

Mr. Walters said "This raised a bigger issue in how can we accomplish more regular dialogue between weights and measures officials and the measurement experts who are writing these standards." "Chapter 4 is currently under revision, so in the short term, we can communicate to the working group that we need to consider the whole gamut in vapor return. We can do that because the timing is right." Mr. Walters stated that at the appropriate time he would ask the Committee for experts from weights and measures to better describe exactly what is wanted from the working group on Chapter 4.

Two opportunities have been raised. One is to make API standards better serve weights and measures use. Typically API standards do not serve retail use. On a longer term we should improve communication to insure that this type of controversy does not occur in the future. It was suggested that Mr. Walters communicate with Steve Hasko regarding any questions that arise regarding the inclusion of vapor-equalization provers. He agreed, and felt that our technical needs be communicated to him. Further, since membership on working groups is not restricted to API members, weights and measures experts can properly be included when issues arise involving our needs. An invitation was made for the Liaison Committee to take advantage of Mr. Walter's offer. Mr. David Smith accepted the offer.

Weights and measures representatives have provided input to the working group for Chapter 4, "Proving Systems", and has been actively working with this group through correspondence.

509

LIAISON WITH REGIONAL ASSOCIATIONS

Representatives of all four regional weights and measures associations and Richard Smith, Regional Coordinator, were present for a discussion on better use of the Liaison Committee by the regional associations. It was generally agreed that communication between the regional associations and the standing committees was on a haphazard basis. Only within the last year has any information been forwarded to the Liaison Committee from any of the associations.

Richard Smith stated that as Regional Coordinator he is working to provide all regional committee reports to all national committees. One of the problems is getting the information from the regional committees. Mr. Smith also felt that there were items discussed at regional association meetings that should properly be submitted to the Liaison Committee and he would make a personal effort to forward these items to the Liaison staff advisor.

It was reported that issues sent in to OWM prior to the Interim Meeting were often addressed to the wrong committee and unless it obviously belonged to another Committee it was usually buried in that committee's agenda. It is hoped that these issues could be entered in the computer data bases and that staff advisors could scan these issues at intervals to determine appropriate assignments of issues.

A request was made that regional associations send committee reports to OWM within 30 days of the meetings. Lists of Officers and committee members of the regionals were also requested to be sent within 30 days.

It was felt that there was no need for regional liaison committees but that Regional Committees and Chairpersons be made aware of types of issues that should be forwarded to the Liaison Committee.

510 WEIGHTS AND MEASURES WEEK

Over 220 weights and measures officials from state and local jurisdictions will coordinate weights and measures week activities March 1-7. Fairbanks Scales, the Institute of Weights and Measures, and the Scale Manufacturers Association will mail information to coordinators. The Weights and Measures Week Guide 1986, NCWM Publication #7, has been revised, published, and mailed to all coordinators.

All industries, trade associations, and weights and measures officials are urged to mail news articles, pictures, publications, and media reports to Peggy H. Adams, Chief Sealer/Director, Bucks County Consumer Protection Weights and Measures, Broad and Union Streets, Doylestown, PA 18901. The Committee recommends that officials use the Guide for public information and awareness on a year-round basis. It has also been recommended that the publication's name be changed to indicate it can be used throughout the year.

Plans are being made to include Weights and Measures Week activities in the 200th celebration of the Constitution of the United States in 1987 and the 150th Anniversary of the presentation of the first standards to the states in 1988.

511 WEIGHTS AND MEASURES LEGAL CASES

The Committee will coordinate an effort to update the last weights and measures case reference book listing court decisions through July 1952. Although state court decisions are now available through a computerized service, Lexis/Nexis, there are unusual cases that are decided at the local district or business court or at administrative hearings that do not reach the higher court level and are not on record. Many of these cases develop legal precedence that have a bearing on future litigation. There are also court decisions that are made that concern cases that are not necessarily weights and measures cases but have an effect on them such as Federal policy.

Liaison Committee

The Committee will send a survey questionnaire (see Appendix A) to all jurisdictions in an attempt to find out what unusual decisions have been made but are not a matter of record. Jurisdictions will be requested to continually update their information, which will result in a conference updated publication of weights and measures legal cases that can be utilized by all jurisdictions.

N. D. Smith, North Carolina, Chairman

P. H. Adams, Bucks County, PA

J. H. Akey, Kansas

C.R. Kloos, Beatrice/Hunt-Wesson Foods, Inc.

J. W. McCutcheon, USDA

S. Hasko, NBS, Technical Advisor

COMMITTEE ON LIAISON

APPENDIX A

SURVEY FOR LEGAL CASE REFERENCE BOOK

TO: Weights and Measures Officials
From: Liaison Committee, NCWM
Re: Update of Legal Case Reference Book

The last Weights and Measures Legal Reference Book included decisions on the state and Federal court level through July 1952. The Liaison Committee feels there is a need to update this book. It will be published as an official NCWM Handbook.

The update should include the following cases concerning packaging and labeling, net contents and devices, and weights and measures practices:

- A. Appropriate Federal and state decisions on weights and measures cases in the U.S. Supreme Court, Federal District Court, State Supreme Courts, State Courts of Appeal and State Courts of Record. Many of these decisions appear as part of the state and Federal Reports publications, but we would like your input on cases that have affected your operations.
- B. Decisions and policies on weights and measures cases at the District Court, Local Court or Administrative Hearing level. Most of these decisions, policies, and strategies are not published in archival collections but have an important bearing on a majority of weights and measures cases. If you have anything to report in this category, we need a copy of the decision.
- C. Decisions and policies of Federal agencies involved with or affecting weights and measures.

Send Information to:

Steve Hasko
National Conference on Weights and Measures
P.O. Box 3137
Gaithersburg, MD 20878

ANNUAL COMMITTEE REPORTS

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 on January 22, 1986 and nominated the listed persons to be 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:	Darrell A. Guensler, California
VICE-CHAIRMEN:	Peggy H. Adams, Bucks County, PA Fred A. Gerk, New Mexico Don E. Staggs, Alabama Robert W. Walker, Indiana
EXECUTIVE COMMITTEE: (3-year terms)	Louis D. Draghetti, City of Agawam, MA John J. Bartfai, New York
TREASURER:	Charles Gardner, Jr., Suffolk County, NY
CHAPLAIN:	Martin Coile, Georgia

Respectfully submitted:

Sam F. Hindsman, Arkansas, Chairman

Edward C. Heffron, Michigan
Charles H. Greene, New Mexico
James F. Lyles, Virginia
Kendrick J. Simila, Oregon
Joseph L. Swanson, Alaska
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 H. Carroll, Chairman
Division of Measurement Standards
State of Massachusetts

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 71st Annual Meeting. Special votes of thanks to:

- (1) William P. Stevens, Secretary/Director, New Mexico Department of Agriculture, for his welcoming address that brought interesting and useful comments that clearly expressed his thoughts on the importance of weights and measures to the commerce of the States;
- (2) Ernest Ambler, Director, National Bureau of Standards, for his evaluation of the progress of the Conference, his challenge to adopt Conference results by the States, and his incisive appraisal of the health of the National Conference on Weights and Measures; special acknowledgement is made of the new "President's Award" established by Dr. Ambler to recognize those States in full support of the NCWM;
- (3) officers and appointed officials of the National Conference on Weights and Measures for their assistance and service toward progress on national issues;
- (4) committee members for their efforts throughout the past year preparing and presenting their reports, to the subcommittees and task forces for their discerning and appropriate recommendations;
- (5) governing officials of State and local jurisdictions for their advice, interest, and support in weights and measures administration in the United States;
- (6) 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) The staff of the Albuquerque Marriott Hotel for their assistance and courtesies, which contributed to the enjoyment and comfort of the delegates in their fine facilities;
- (8) 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;
- (9) The Office of Weights and Measures staff; Ann Heffernan and Karen Barkley for expert and hospitable operation of the administrative operations of the meeting;
- (10) The New Mexico Division of Standards and Consumer Services for their tireless and essential support to the Conference, its committees, and our guests throughout the meeting week.
- (11) Sandia Laboratories for the excellent tour that was held Monday afternoon for State metrologists and other NCWM delegates, and, specifically, Mr. Richard Heckman who coordinated the total tour and other staff members, all of whom did outstanding jobs of explaining their activities.

C. Carroll, Massachusetts, Chairman

W. Eldridge, Mississippi

D. Lynch, Kansas City, Kansas

G. MacDonald, Minnesota

E. Maxwell, District of Columbia (absent)

E. Stephens, Utah

F. Thomas, Pennsylvania

R. Smith, NBS, Technical Advisor

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

Ed Romano, Sealer
Department of Weights and Measures
Glenn County
Willows, California

REFERENCE KEY

900

The Auditing Committee met on Tuesday afternoon, July 22, 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.

E. Romano, Glenn County, CA Chairman

F. Clem, City of Columbus, OH
L. Maurer, Rhode Island,

R. Smith, NBS, Technical Advisor

AUDITING COMMITTEE

On motion of the Committee Chairman the report of the Auditing Committee, Reference Key Item 900, was adopted by the Conference.

REPORT OF THE CONFERENCE TREASURER

Charles A. Gardner, Director
Weights and Measures
Suffolk County, New York

REFERENCE KEY

1000

It is my pleasure to report to you on the financial status of the Conference Treasury as follows:

CASH ON HAND - JUNE 30, 1985 \$ 38,519.14

RECEIPTS

Account No.	1.1	Registration	\$41,050.00	
"	"	1.2 Membership	45,570.00	
"	"	1.3 Publications	2,302.89	
"	"	1.4 Interest	2,379.29	
"	"	1.5 Novelties	3,440.87	
"	"	1.9 Miscellaneous	<u>1,124.00</u>	
TOTAL RECEIPTS				\$ 95,867.05
TOTAL CASH BALANCE AND RECEIPTS				<u>\$134,386.19</u>

DISBURSEMENTS

Account No.	2.0	Annual Meeting	\$14,733.57	
"	"	3.0 Interim Meeting	17,425.12	
"	"	5.0 Special Programs	18,470.37	
"	"	6.0 Chairman's Expenses	9,150.31	
"	"	7.0 Membership	5,817.80	
"	"	8.0 Printing & Publications	1,411.46	
"	"	9.0 Administration	16,920.66	
"	"	11.0 Novelties	4,108.67	
"	"	12.0 Publications	<u>5,282.43</u>	
TOTAL DISBURSEMENTS				\$ 93,320.39

Cash on Hand - June 30, 1986		
Super N.O.W. Account -		
European American Bank		
Hauppauge, New York		40,751.56
Checking Account		
Union Trust Co., Gaithersburg, MD		<u>314.24</u>

TOTAL ASSETS \$ 41,065.80

TOTAL DISBURSEMENTS AND ASSETS \$134,386.19

Charles A. Gardner, Treasurer

On motion of Mr. Gardner, the Report of the Conference Treasurer, Reference Key Item 1000, was adopted by the Conference.

TREASURER'S REPORT

**FISCAL YEAR 70 (1985-86)
NATIONAL CONFERENCE ON WEIGHTS AND MEASURES
GRANT ACCOUNT**

CASH ON HAND - June 30, 1985	\$ 2,817.94
<u>RECEIPTS</u>	112,328.76
TOTAL CASH BALANCE AND RECEIPTS	<u>\$115,146.70</u>
<u>TOTAL DISBURSEMENTS</u>	113,003.53
Cash Balance - June 30, 1986 Super N.O. W. Account - European American Bank Hauppauge, New York	\$ 2,143.17
<u>TOTAL DISBURSEMENTS AND CASH BALANCE</u>	<u>\$115,146.70</u>

Charles A. Gardner, Treasurer

On motion of Mr. Gardner, the report of the Conference Treasurer, Reference Key Item 1000, was adopted by the Conference.

MISCELLANEOUS

APPOINTMENTS BY CHAIRMAN

Chairman Frank Nagele announced the following appointments at the General Session on Thursday, July 24, 1986:

STANDING COMMITTEES

Chairmen and appointments are as follows:

Executive Committee

Chairman: Frank Nagele, Michigan

John Bartfai, New York, appointed for a three-year term;

Louis Draghetti, Agawam, Massachusetts appointed for a three-year term.

Laws and Regulations

Chairman: Allan Nelson, Connecticut

N. David Smith, North Carolina, appointed for a five-year term.

Specifications and Tolerances

Chairman: Fred Gerk, New Mexico, and one-year extension of term;

James Truex, Ohio, appointed for a five-year term.

Education Committee

Chairman: Thomas Geiler, Barnstable, Massachusetts

Steven A. Malone, Nebraska, appointed for a five-year term.

Liaison Committee

Chairman: Peggy Adams, Bucks County, Pennsylvania

Paul Engler, Los Angeles County, California, appointed for a five-year term.

OTHER ACTIONS

The Subcommittee on Commodity Standards completed its work and has been disbanded with appreciation.

Board of Governors, NTEP

Chairman-Elect Guensler assumed the Chairmanship of the Board of Governors of NTEP.

Nominating Committee

Chairman Nagele appointed the following members to the Nominating Committee:

<u>Regional Area</u>	<u>Member</u>
Western	George Mattimoe, Hawaii Kendrick Simila, Oregon
Central	Edward Heffron, Michigan Donald Lynch, Kansas City, KS
Northeast	Allan Nelson, Connecticut Peggy Adams, Bucks County, PA
Southern	Richard Thompson, Maryland

Chairman Nagele will establish a new Task Force on the Prevention of Fraud in Weights and Measures Devices and Use of Devices. He has asked for volunteers for this Task Force and will announce its membership as soon as it is formed.

Decisions regarding membership on other existing Task Forces and Committee members will be made as necessary. Frank Nagele, Chairman, resigned from those on which he is a member.

Associate Membership Committee

Walter Kupper, Mettler, Chairman
Kenneth Appell, Colgate-Palmolive, Vice-Chairman
Richard Davis, James River/Dixie Northern, Treasurer
Max Casanova, Ramsey Engineering co.
Harvey Lodge, Dunbar
Anthony Ladd, A. J. Ladd Weighing & Packaging Systems
Robert Nelson, General Mills
J. Edward Thompson, Kraft, Inc.
Tom Topalis, The Quaker Oats Company
Ray Wells, Sensitive Measurements, Inc.

REPORT ON STATE METROLOGY WORKSHOPS

Paul H. Krupenie
National Bureau of Standards

Workshop sessions were held on Monday, July 21 and on Wednesday, July 23.

The Monday session comprised a tour of the standards laboratory and other facilities of the Sandia National Laboratory. The first stop of the tour provided an orientation to the scope of Sandia's standards activities and a visit to the solar central receiver for electric power generation. Their experiments point towards the future, even though the facility now generates only a small amount of power.

At Sandia's main laboratory, the small mass laboratory was of top interest to the metrologists. The shock mounting of the tables on which the balances rested were met with mixed reactions. The metrologists were intrigued by the use of a light bulb mounted near the balances to shorten the warmup time before making measurements. Additional labs visited were those involving length, temperature, microwave, and time-and-frequency calibrations. Dick Schulmeister, metrologist for New Mexico, and Dick Heckman of Sandia planned and coordinated the visit.

On Wednesday, the session included regional metrology reports, discussions of calibration of conveyor belt test chains, some problems with thermometer calibration, and results of experiments on provers at a Virginia fuel tank farm.

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