REPORT OF THE

54th NATIONAL CONFERENCE ON WEIGHTS AND MEASURES 1969

U.S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
SPECIAL PUBLICATION 318

NATIONAL BUREAU OF STANDARDS

The National Bureau of Standards [1] was established by an act of Congress March 3, 1901. Today, in addition to serving as the Nation's central measurement laboratory, the Bureau is a principal focal point in the Federal Government for assuring maximum application of the physical and engineering sciences to the advancement of technology in industry and commerce. To this end the Bureau conducts research and provides central national services in four broad program areas. These are: (1) basic measurements and standards, (2) materials measurements and standards, (3) technological measurements and standards, and (4) transfer of technology.

The Bureau comprises the Institute for Basic Standards, the Institute for Materials Research, the Institute for Applied Technology, the Center for Radiation Research, the Center for Computer Sciences and Technology, and the Office for Information Programs.

THE INSTITUTE FOR BASIC STANDARDS provides the central basis within the United States of a complete and consistent system of physical measurement; coordinates that system with measurement systems of other nations; and furnishes essential services leading to accurate and uniform physical measurements throughout the Nation's scientific community, industry, and commerce. The Institute consists of an Office of Measurement Services and the following technical divisions:

Applied Mathematics—Electricity—Metrology—Mechanics—Heat—Atomic and Molecular Physics—Radio Physics [2]—Radio Engineering [2]—Time and Frequency [2]—Astrophysics [2]—Cryogenics.[2]

THE INSTITUTE FOR MATERIALS RESEARCH conducts materials research leading to improved methods of measurement standards, and data on the properties of well-characterized materials needed by industry, commerce, educational institutions, and Government; develops, produces, and distributes standard reference materials; relates the physical and chemical properties of materials to their behavior and their interaction with their environments; and provides advisory and research services to other Government agencies. The Institute consists of an Office of Standard Reference Materials and the following divisions:

Analytical Chemistry—Polymers—Metallurgy—Inorganic Materials—Physical Chemistry.

THE INSTITUTE FOR APPLIED TECHNOLOGY provides technical services to promote the use of available technology and to facilitate technological innovation in industry and Government; cooperates with public and private organizations in the development of technological standards, and test methodologies; and provides advisory and research services for Federal, state, and local government agencies. The Institute consists of the following technical divisions and offices:

Engineering Standards—Weights and Measures—Invention and Innovation—Vehicle Systems Research—Product Evaluation—Building Research—Instrument Shops—Measurement Engineering—Electronic Technology—Technical Analysis.

THE CENTER FOR RADIATION RESEARCH engages in research, measurement, and application of radiation to the solution of Bureau mission problems and the problems of other agencies and institutions. The Center consists of the following divisions:

Reactor Radiation—Linac Radiation—Nuclear Radiation—Applied Radiation.

THE CENTER FOR COMPUTER SCIENCES AND TECHNOLOGY conducts research and provides technical services designed to aid Government agencies in the selection, acquisition and effective use of automatic data processing equipment; and serves as the principal focus for the development of Federal standards for automatic data processing equipment, techniques, and computer languages. The Center consists of the following offices and divisions:

Information Processing Standards—Computer Information—Computer Services—Systems Development—Information Processing Technology.

THE OFFICE FOR INFORMATION PROGRAMS promotes optimum dissemination and accessibility of scientific information generated within NBS and other agencies of the Federal Government; promotes the development of the National Standard Reference Data System and a system of information analysis centers dealing with the broader aspects of the National Measurement System, and provides appropriate services to ensure that the NBS staff has optimum accessibility to the scientific information of the world. The Office consists of the following organizational units:

Office of Standard Reference Data—Clearinghouse for Federal Scientific and Technical Information [3]—Office of Technical Information and Publications—Library—Office of Public Information—Office of International Relations.

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[1] Headquarters and Laboratories at Gaithersburg, Maryland, unless otherwise noted; mailing address Washington, D.C. 20234.

[2] Located at Boulder, Colorado 80302.

[3] Located at 5285 Port Royal Road, Springfield, Virginia 22151.

Report of the 54th National Conference on Weights and Measures 1969

Sponsored by the National Bureau of Standards
Attended by Officials from the Various States, Counties, and Cities, and Representatives from U.S. Government, Industry, and Consumer Organizations
Washington, D.C., June 9, 10, 11, 12, 13, 1969

Report Editor: R. L. Koeser

United States Department of Commerce
Maurice H. Stans, Secretary

National Bureau of Standards
Lewis M. Branscomb, Director

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Abstract

This is a report of the proceedings (edited) of the Fifty-fourth National Conference on Weights and Measures, sponsored by the National Bureau of Standards, held in Washington, D.C., June 9–13, 1969 and attended by State, county, and city weights and measures officials and representatives of the Federal Government, business, industry, railroads, and associations.

Key words: Conference, weights and measures—laws, weights and measures—regulations, weights and measures—technical requirements, weights and measures—history, weights and measures.

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OFFICERS AND COMMITTEES

OFFICERS

(As elected by the Fifty-third National Conference to serve during the Fifty-fourth)

President: A. V. Astin, Director, National Bureau of Standards.
Executive Secretary: M. W. Jensen, Chief, Office of Weights and Measures. } *Ex officio*

Chairman: S. H. Christie, Deputy State Superintendent, Division of Weights and Measures, Department of Law and Public Safety, Trenton, New Jersey.

Vice Chairmen:

W. C. Hughes, Chief Administrative Assistant, Division of Standards, Department of Labor and Industries, Boston, Massachusetts.

J. F. Lyles, Supervisor, Weights and Measures Regulatory Section, Division of Regulatory Services, Department of Agriculture and Commerce, Richmond, Virginia.

R. L. Sharp, City Sealer of Weights and Measures, Fort Worth, Texas.

C. B. Whigham, Chief, Division of Markets, Weights and Measures, Department of Agriculture, Las Cruces, New Mexico.

Treasurer: C. C. Morgan, City Sealer of Weights and Measures, Gary, Indiana.

Chaplain: R. W. Searles, County Inspector of Weights and Measures, Medina County, Ohio.

(As elected by the Fifty-fourth National Conference to serve during the Fifty-fifth)

A. V. Astin, *President*
H. F. Wollin, *Executive Secretary* } *Ex officio*
R. W. Searles of Medina County, Ohio, *Chairman*
M. H. Becker of Los Angeles County, California, *Vice Chairman*
J. R. Bird of New Jersey, *Vice Chairman*
L. A. Gredy of Indiana, *Vice Chairman*
C. Wooten of Florida, *Vice Chairman*
C. C. Morgan of Gary, Indiana, *Treasurer*
J. I. Moore of North Carolina, *Chaplain*

EXECUTIVE COMMITTEE

(As elected by the Fifty-fourth National Conference)

A. V. Astin
H. F. Wollin
R. W. Searles
M. H. Becker
J. R. Bird
L. A. Gredy
C. Wooten
C. C. Morgan
J. I. Moore
} *Ex officio*

E. W. Ballentine
R. C. Baumgartner
J. T. Bennett
R. J. Cord
F. J. Fallon
B. R. Haught
F. D. Morgan
L. A. Rick
L. W. Vezina
R. T. Williams

STANDING COMMITTEES

(As constituted at the conclusion of the Fifty-fourth National Conference, the personnel of each of the standing committees are as listed. The remaining term of office for each committee member, in years, is shown in parentheses following each entry.)

EDUCATION*

G. E. Mattimoe of Hawaii, *Chairman* (4)
J. I. Moore of North Carolina (2)
W. I. Thompson of Monmouth County, New Jersey (1)
B. A. Pettit of District of Columbia (3)
E. Prideaux of Colorado (5)

LAWS AND REGULATIONS*

J. F. Lyles of Virginia, *Chairman* (1)
G. L. Delano of Montana (3)
R. W. Richards of Pennsylvania (4)
J. L. Littlefield of Michigan (5)
M. R. Dettler of Seattle, Washington (2)

SPECIFICATIONS AND TOLERANCES*

R. Rebuffo of Nevada, *Chairman* (2)
R. L. Thompson of Maryland (1)
D. E. Konsoer of Wisconsin (3)
J. C. Mays of Dade County, Florida (4)
W. C. Hughes of Massachusetts (5)

COMMITTEE ON LIAISON WITH THE NATIONAL GOVERNMENT*

J. H. Lewis of Washington, *Chairman* (1)
R. C. Primley, Cities Service Oil Company (2)
E. E. Wolski, Colgate Palmolive Company (3)
M. Greenspan of New York City, New York (4)
A. Sanders, Scale Manufacturers Association (5)

ANNUAL COMMITTEES ACTING ONLY DURING THE FIFTY-FOURTH CONFERENCE

Nominations: J. F. True of Kansas, *Chairman;* H. E. Crawford of Jacksonville, Florida; M. Jennings of Tennessee; F. J. Fallon of New York; E. H. Black of Ventura County, California; C. C. Morgan of Gary, Indiana, R. E. Meek of Indiana.

Resolutions: M. R. Dettler of Seattle, Washington, *Chairman;* W. H. Naudain of Delaware; F. M. Gersz of Connecticut; W. T. Deloge of Fitchburg, Massachusetts; R. T. Williams of Texas; J. E. Mahoney of Maryland; W. E. Czaia of Minnesota.

Auditing Committee: H. E. Smith of San Mateo County, California, *Chairman;* L. W. Vezina of Alexandria, Virginia; J. C. Boyd of Iowa.

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*H. F. Wollin, Executive Secretary of the Conference, is *ex officio* nonvoting secretary to each committee.

OPEN COMMITTEE MEETINGS

Monday, June 9, 1969

Monday was set aside for meetings of the Conference committees. Notices of these meetings were carried in the Conference Announcement booklet, in all pre-Conference publicity, and in the printed Conference program.

The Conference committees that met on Monday were the Executive Committee, the Committee on Education, the Committee on Specifications and Tolerances, the Committee on Liaison with the National Government, and the Committee on Laws and Regulations.

Many delegates participated in the committee meetings, which were very well attended and informative to all. The discussions which took place in these meetings were particularly helpful to the members of each committee and played an important role in guiding the committees in their deliberation and preparation of their final reports.

The final reports of the committees will be found beginning on page 157 and will reflect the discussion that took place during the open meetings and the actions taken by the Conference at the time the final reports were presented to the delegates.

REPORT OF THE FIFTY-FOURTH NATIONAL CONFERENCE ON WEIGHTS AND MEASURES

MORNING SESSION—TUESDAY, JUNE 10, 1969

(S. H. Christie, *Chairman*, Presiding)

The invocation was delivered and the memorial service for departed members was conducted by the Conference Chaplain, Rev. R. W. Searles of Ohio.

Rev. Searles led the delegates in the Pledge of Allegiance.

ADDRESS

by the Honorable Maurice H. Stans, *Secretary of Commerce*
U.S. Department of Commerce

It is a special privilege for me to be here before the National Conference on Weights and Measures. It happens that my first National Conference is the last, officially, for your President of 17 years, Dr. Allen V. Astin, who is retiring in August as Director of the National Bureau of Standards. He is one of those in the administration for whom our respect was so great that I urged him to stay on and he has agreed to stay until August when he will have reached his 65th birthday and fulfilled his 37th year of service to the Government of the United States. My congratulations to Dr. Astin on his distinguished career, and the kind words I say about this Conference may be taken also as a compliment to his excellent stewardship.

I am impressed by this National Conference and its achievements. This Administration is dedicated to enlisting the talents and energies of private industry in the task of building a better America. For well over half a century this Conference has brought together officials from all levels of government and representatives of private industry to discuss problems of common interest. The effectively operating systems of weights and measures administration in this country is testimony to the fine job you have done. I urge you to carry on in the same spirit and meet the requirements of what has now become a technologically advancing society and one that is also becoming much more socially conscious of responsibilities on the part of the community to the individual.

This Administration, under President Nixon, is dedicated to enlisting the talents and energies of private industry in building America.

No one wants to emphasize that more than I, and no one in the government has a greater responsibility than I to see that private industry is drawn in to our deliberations and to our conclusions and in turn, that private industry is asked to play a responsible part in the development of the American economy. In our economic philosophy, and in our working economy, it is inescapable that our first resource for meeting these needs is the great industrial establishment which our free enterprise system has built. It is the ablest and most versatile instrument the world has ever seen. Every endeavor we launch, whether it is meeting the crisis in our cities, exploring space, or clearing up our environment, will depend for its success on the resources and the abilities of private industry.

Government will take a part, but government alone can't accomplish all these tasks. Some of the technology, the manpower, the capital, the means, and the resources will have to be that which the private sector has accumulated through all the years.

These resources of our private industry, economic resources and human resources, are really beyond comprehension. Our main aim in government is to draw industry into creative partnership with all levels of government and, in this way, we can deal cooperatively with the problems we face today. With that kind of a partnership, we will be able to meet the challenges of the last half of the century from a position of real strength, and we will be able to meet the reasonable demands of the people for a better way of life.

In discussing government and private industry relationships, I would like to concentrate most of my presentation here on just one restricted field as an illustration of the kind of complexities and adjustments we face in the near future. The field I want to discuss is consumer relations.

Consumer relations has both a direct and an indirect interest to you in the field of weights and measures. The area of product safety, for example, is perhaps not as closely related to your activities, as other consumer-related problems, but I know it is a subject in which you have a great deal of interest.

The American consumer is just now emerging as a coherent force in economics and politics. A few of the laws involving the Department of Commerce which have recently been passed by the Congress give an idea of the potential power of this new force: auto safety, flammable fabrics, fire research and safety, and fair packaging and labeling. These laws were designed to guide and aid industry in its continuing effort to satisfy the needs and desires of its customers in a rapidly changing and often confusing technological world.

Our Department of Commerce has a long tradition of service in aiding industry in setting product standards. Herbert Hoover, while Secretary of Commerce in the 1920's, took a great interest in standards. Standards, he said, contribute to "protecting both producer and con-

sumer" and help "to make the wealth and strength of the American people."

If there is a lesson to be learned from the recent history of consumer activism, particularly with respect to product safety, it is that there is a growing need for creative interaction between Government and industry to protect the welfare of the consumer, and also to protect the maker from unreasonable demands of the consumer. There has to be a balance at all times between what is the ultimate in safety and consumer convenience and that which is practical for industry. I think the protection needs to be extended in both directions, and this is a matter that is sometimes forgotten. The philosophy of "the public be damned" has long since passed from the American scene, and it never characterized more than a very small part of the industrial community. Private industry is investing increasingly large sums in product research, testing, quality control, and service. Ever more rigorous standards are being developed, and rigidly enforced through self-discipline.

One part of the Federal Government's job is to encourage greater voluntary action on the part of industry, and where we have sought this involvement the results have been highly encouraging. Therefore, it is good economics for a company to be solicitous of the welfare of the consumers just as it is good politics for the politician to be solicitous of the welfare of the voters!

Voluntary action by private industry has long been a keystone of our economic system. The thousands of engineering standards promulgated by such groups as the United States of America Standards Institute, the Society of Automotive Engineers, the American Society for Testing and Materials, and others, represent the voluntary action of industry on matters of common interest. Of course the Department of Commerce has long been a part of the standards-making process. Through the National Bureau of Standards, we provide technical support to private standards groups, and the Bureau also aids industry in developing and publishing product standards.

In carrying out the Department's responsibilities under the fair packaging law, we have relied exclusively on stimulating voluntary action by industry to reduce the proliferation of package quantities in the marketplace. We have proved, I think, that our preference, like that of private industry, is for voluntary cooperation even where the law gives us the power to act without cooperation.

Historically, the Department of Commerce has been a prominent defender of voluntary action. This is the best way to get the job done. The Commerce Department was not created to become a regulatory agency. And we don't want to get into the business of setting up and enforcing product standards. We prefer voluntary action on the part of industry—and we are confident that we can get it. The ideal sit-

uation as far as I'm concerned would be for business to do the job so well that it would take us entirely out of the field of consumer standards.

When appearing before the National Commission on Product Safety, Mrs. Virginia Knauer, President Nixon's special assistant for consumer affairs, publicly warned that the voluntary system of standards-making is on trial in the area of product safety. She said, "The development of comprehensive safety standards is, at this time, problematical. However, a comprehensive system of safety standards is certainly inevitable if the consumer is to be properly protected against the production of hazardous products."

Certainly the quest for product safety is a just one. But I want Mrs. Knauer's concerns allayed. I want industry to prove me right in my belief that industry will take voluntary action in this area. We must demonstrate more clearly that we can do the job within this time-honored framework. I call on American industry to show once again that standardization by industry itself is a viable path to consumer protection.

Product safety is becoming increasingly a technological problem. In the marketplace today, we have goods so complex and so sophisticated that the average consumer cannot judge for himself their safety. If he comes to believe that he cannot rely on the manufacturer to protect him, he will seek to protect himself through collective action. He will, justifiably, turn to the government as his agent. What I'm saying to the business people here is that the time is ripe right now for an all-out effort to get more done in this matter, to get the jump on the critics, to move ahead of them.

It's the right way, it's the responsible way and it's far better than the alternatives. There are many things to be said for this. We all know that it may mean surrendering some degree of independence, but not as much as could be involved if it's left to legislation.

I might add one more thought to further clarify the role of the Department of Commerce in this area.

For many years, the Department of Commerce has been spoken of as the voice of business in Washington, or the channel of communication between government and business. I take the position that that's too narrow a view. We do not want to be the voice of business in Washington. Of course we will speak from government to business. But I think the real mission of the Department of Commerce in the American society today is to act as we would if we had our name changed to the Department of Economic Development.

I think our responsibility in the Department of Commerce is to speak for and defend and advance the interests of the American enterprise system as a whole, and in doing this we have to represent many groups.

We have to represent the consumer no less than the manufacturer, the distributor no less than the consumer. I might say, paraphrasing an expression that once became famous in Washington, what is good for the consumer is good for industry, and what is good for industry is then good for government, and in reverse, what's wrong for the consumer is wrong for government and wrong for industry.

In the development of voluntary standards, both under the fair packaging law and under the regular NBS product standards program, the Department has always given special emphasis to seeing that all points of view from the marketplace are represented. We will continue to take this balanced approach in our work, whether it be in the technical or the more traditionally defined economic research and services.

We will urge action whenever we can, not to impede the producer but to strengthen the economic system.

We have some very interesting matters under consideration now that we expect to be moving fast on, one of which is of great interest—the metric system.

There are a great many reasons for being interested in the metric system. I also know there are a great many people who think perhaps the cost and the disadvantages of it outweigh the advantages. But in your consideration of the subject and in any actions that take place, one of the things we need to give a great deal of thought to is the importance of the metric system insofar as it affects our exports.

The metric system has become universal around the rest of the world, and it is very difficult to sell our machine tools and a great many of our other products in world markets when they come out in a language of measurement which is not common to what the other countries are using.

The Bureau of Standards is giving a great deal of attention to it, and we expect to have a report within a few years. This report will determine the degree of conformity to the metric system that we can undertake in the United States, what it will cost to do so and how long it will take. In this matter as well as in the matter of product safety, we are at the disposal of you folks in other levels of government in whatever way our assigned duties make it appropriate, and in whatever additional ways the President and the Congress may think necessary.

In all cases, wherever we can, we are going to advocate the voluntary approach. We are going to look for your support and your efforts in achieving that goal.

I wish you well in your deliberations in this meeting, and I thank you all for being here.

ADDRESS OF CONFERENCE PRESIDENT

by Dr. A. V. Astin, *Director, National Bureau of Standards*

Thank you very much for this warm reception. I appreciate it more than I can say.

I am going to follow essentially the same custom that I have followed in the past when I have addressed the Conference. I will review briefly the activities and accomplishments of the National Bureau of Standards over the preceding year.

Overall, this past year has been one of frustration, but with some sense of accomplishment. The major frustration has been the severe restrictions imposed on us by provisions of the tax bill. This is a restriction that we share with most government agencies, and has caused a problem with staffing. We are allowed to fill no more than seven out of every ten vacancies, and as a result, our staff has been declining during the past year. At the same time, we have been confronted with important new responsibilities. It is extremely difficult for us to meet these responsibilities properly with the staff at hand.

During the past five years, NBS has been given six new responsibilities. These are: the operation of the National Standard Reference Data program; the operation of a Center for Computer Sciences and Technology; the Fair Packaging and Labeling program, which you are familiar with; the Flammable Fabrics program, which you will hear about later; the Fire Research and Safety Act program, assigned to us just a little over a year ago; and the metric study which was ordered by the Congress last summer. During the congressional hearings establishing these new responsibilities, it was estimated that adequate implementation of these six programs would cost on the order of $30 million a year. They are presently being funded under $5 million a year. Still, we feel that we are making some progress.

Organizational Changes

We have made a number of organizational changes. We combined, in the Center for Radiation Research, work with the new radiation producing facilities that we have at our new site in Gaithersburg. These facilities include our ten megawatt research reactor and our hundred million electron volt linear electron accelerator.

We have consolidated under one new position, known as the Associate Director for Information Programs, all of the major information activities in NBS including the Clearinghouse, standard reference data program, public and technical information programs, and library.

At the same time, we have our Center for Computer Sciences and Technology reporting directly to the Director. This will permit it to carry out its responsibilities more effectively and enable the Center to coordinate with the information programs more effectively. This coordination is necessary because many information programs depend heavily on computer science and technology.

There have been a number of important staffing changes. My Deputy Director, Dr. Irl Schoonover, retired last December. Fortunately, I was able to find an able man to replace him: Lawrence Kushner, who had been Director of our Institute for Applied Technology. This left a vacancy in that position, and Dr. Howard Sorrows was named the new Director of IAT. He had previously been the Deputy Director of our Institute for Materials Research.

Also, in our Institute for Applied Technology, we have promoted Mac Jensen to be the Deputy Director. This means that, in the future he will not be able to give as much attention to weights and measures activities as he has in the past. But his interest in the program, I am sure, will not lessen in any way, since weights and measures activities will continue to report to him in his new capacity.

We were fortunate in having able successors for Mac Jensen. In view of the growing importance of the work of this Conference, as well as our own weights and measures activities, we decided to break the old job up into two pieces. Harold Wollin, who has worked with you for a long time, is now the Executive Secretary of this Conference, and Tom Stabler is heading our Office of Weights and Measures.

At our Boulder laboratories, we have consolidated all of our activities there under the direction of one man, Bascom Birmingham, who has the title of Deputy Director of our Institute for Basic Standards.

It is most heartening in all of these new appointments that we have had such able talent with NBS to fill these responsibilities.

Technical Highlights

Now let me review some of the technical program accomplishments. One of the most important things in our Institute for Basic Standards has been the establishment of an Office of Measurement Services under the leadership of Joe Cameron, who had previously headed our Statistical Engineering Section. The goal of this office is to take a more active part in making sure that the instruments we calibrate, and other measurement services we provide, are effectively utilized by our customers. It reflects an overall policy within NBS to become more deeply concerned with our customers in order to provide more effective service.

Our Institute for Basic Standards continues its close cooperation with the International Bureau of Weights and Measures. At the meeting of the International Committee of Weights and Measures last year, some important developments took place in metrology.

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Of particular significance is the redefinition of the International Practical Temperature Scale and the extension of the scale to lower temperatures. In addition, the International Committee decided to change the value of the volt as maintained at the International Bureau of Weights and Measures. This decision was based on extensive comparisons among national laboratories which showed that the value assigned to the standard could be improved. Through international agreement, it was increased by 11 parts in a million.

Our own people changed the volt as maintained by the National Bureau of Standards to relate to this new value. We required a somewhat lesser change to conform to the new value—about 9 parts in a million.

In the field of atomic time standards, we have been working with the Naval Ordnance Laboratory. The adoption two and a half years ago of an atomic definition for the second has made it important that we and the Naval Observatory coordinate our time scale maintenance activity in order that there be no discrepancies or uncertainties in terms of time measurement in the country. We have had excellent relations with the Naval Observatory people, and we are most fortunate that we have been able to work out a meaningful cooperative agreement.

We completed and occupied during the past year a new nonmagnetic laboratory—a special structure devoid of magnetic materials. Our service will be facilitated by having this available.

In our Institute for Materials Research, we have made great progress in developing new important standard reference materials for biology and medicine where measurement problems are becoming increasingly important.

We have also moved towards internationalizing our program in standard reference materials. With the cooperation of the International Committee on Weights and Measures, a conference was held at the Bureau last month. Representatives of fifteen nations and four international organizations were in attendance. It was agreed that steps should be taken to increase international cooperation in this area.

Our work in developing techniques for materials purification continues encouragingly. One significant development was the production of probably the purest aluminum which has ever been made, having impurities of only 2 parts per million. Extremely pure materials frequently have unusual properties, and this is the case with aluminum. The sample will be particularly important for low temperature studies.

Our work in measurement of the properties of materials and in standard reference materials is also providing services to those concerned with pollution and environmental control.

In our Institute for Applied Technology, there have been many interesting developments. I think one of the most striking has been their

contribution to the Department of Housing and Urban Development in the evaluation of new building systems.

For example, in the rebuilding of Detroit after it was so severely damaged through riots, there was proposed a new building system which would provide housing much more quickly and at a much lower cost. However, the new building system was so radical that it seemed to violate building codes. Only when extensive tests in our laboratories demonstrated the structural soundness of the new approach did the Department of Housing and Urban Development feel justified in using it.

In addition, we have started an important new program to develop data on windloading properties of structures. The data should be useful in improving building design. This investigation is being carried out in cooperation with the Environmental Science Services Administration of the Department of Commerce.

We are very pleased with the progress made in the Fair Packaging and Labeling Act implementation. Agreement has been reached for industry to reduce voluntarily the number of sizes in products representing over 60 percent of the dollar volume of goods found in our markets.

The Flammable Fabrics program, also implemented by our Institute for Applied Technology, is making good progress. One of the most important developments here was the holding of an important symposium on the measurement of flammability. In this area, meaningful standards must be based on reliable, compatible measurement techniques. The state of the art is not well advanced, and this conference was an important step in improving these techniques.

IAT also has responsibility for implementing the Fire Research and Safety Act. No funds have yet been made available for this program. We have, however, put together a small staff, absorbing the necessary funds by curtailments in other programs. This staff will be engaged in planning efforts until funds are made available for the implementation of the program.

In our Center for Computer Sciences and Technology, the first three information processing standards have been promulgated and are now mandatory in government. We are rapidly nearing the stage where we will have a standard business programing language, commonly known as COBOL, for use within government. In addition, we have developed and made available a standard magnetic tape for the evaluation of certain mechanical aspects of computer systems.

In our Center for Radiation Research, our reactor has been in full operation now for some months. Unfortunately, with the shortage of funds we have not been able to operate it all the time. We run it as long as we can—that is until the money runs out, and then close it down for a period and recuperate.

In addition, an important new tool, an isotope separator, has been placed in operation.

In the general area of administrative accomplishments that affect the entire bureau, I am pleased to report that we have worked out agreements with the University of Maryland and with George Washington University for a number of cooperative activities in research, teaching, and in training of staff. Through these agreements, we will be better able to use the resources of these universities for the continuing education of our staff, and they will be able to draw on our resources for graduate education and training, as well as to implement cooperative research programs.

Our new facilities at Gaithersburg have brought to NBS scientific and technical leaders from around the world. This happens to an appreciable extent through the many important conferences held here. These conferences cover such topics as electronic printing, building research, laser technology, systems analysis of social problems, and drug evaluation. Two specific conferences held at NBS of interest to this group were the Scientific Apparatus Makers Association and the United States of America Standards Institute meetings.

One important publication which we had at NBS during the past year dealt with the Metric System. We have had a chart about the Metric System for some time, but we made a radical revision of it when it was republished this January. I want to call this specifically to you attention, and I understand that there will be copies of it here for you to examine. In view of the metric study, we think that a chart which explains the modern Metric System is most important.

I don't need to say anything about the progress on the metric study, because you will hear more about that later from Mr. McNish who heads this study.

We have completed this past year the construction at the Gaithersburg site. This project, which started in 1956 and began construction in 1961, is now completed. Construction was planned in four phases, and it is the fourth phase—involving several special purpose laboratories—that has just been finished and turned over to us. The last one, the Fluid Dynamics building was completed about six weeks ago.

Also completed during the past year were an acoustics lab, a chemical engineering lab, a hazardous chemical handling laboratory, and a concreting materials laboratory.

Finally, since this is the last Conference at which I will be privileged to participate as your President, I would like to review, briefly, what I think is substantial progress that has been made in the Conference over the past several years.

To an appreciable extent, my involvement with the Conference coincides with Mac Jensen's involvement, and whatever good things might be attributed to my administration can be placed squarely on Mac Jensen's shoulders.

All I had to do was give him support to do the things he asked. This also applied to Bill Bussey who preceded him in heading our Office of Weights and Measures.

One of the most important developments in recent years was the formalization of your Conference procedures. I think it was an important step in the development of the Conference, and particularly important in that it gave more initiative and self-determination to the Conference members and less responsibility to the Bureau in terms of leadership.

Also, working through your Conference, we have evolved at NBS important training programs for weights and measures officials. This, in my judgment, is one of the most important things that has happened in improving weights and measures administration throughout the United States in recent years.

Also, there has been great improvement in uniformity and adequacy of weights and measures laws in the States and local communities. Two decades ago, less than half of the States had weights and measures laws which were judged adequate. Now I think there is general agreement that all States have effective laws. There is still room for improvement and that, of course, is the heart of much of the work of your Conference. But the situation is substantially improved over what it was two decades ago.

There has also been great progress in improving standard testing techniques and inspection procedures through your committee on Specifications and Tolerances. These recommendations have been formalized in publications based on your recommendations.

Capping the weights and measures program, I think, is the provision to provide new standards to the States. This idea also came from a recommendation by this Conference. The program is moving extremely well. Standards have been distributed to the first twenty of the fifty States, and formal dedication programs have been held in eighteen. The distribution of standards for the third ten States is now pretty well complete, and the formal dedication for these States will undoubtedly begin this fall.

One of the most satisfying things about this program is that we have done it at less cost than anticipated. When we made the justification several years ago to the Congress for this program, we estimated that it would cost about $2 million. In our presentation to the Congress this spring, we told them that we could complete the program for $1.7 million—$300,000 less than originally planned—and in addition give standards to the District of Columbia, Puerto Rico, and the Virgin Islands. These had not been included in the original plan. That is an accomplishment in which the Office of Weights and Measures can take great pride.

I now come to one of the best parts of my responsibility as your

Conference President, and that is the naming of individuals to head your working committees.

It is largely through your committees that new inspection procedures, and new standards are developed. The work of these committees is no better than the work and dedication of the men who serve on them. So, we take great care in selecting individuals to work on these committees, and we take great pride in the accomplishments of those appointed.

First, the Committee on Education. I am appointing Mr. Earl Prideaux of the State of Colorado for a five year term to succeed A. D. Rose of California.

On the Committee on Laws and Regulations, I am appointing Mr. M. R. Dettler of Seattle, Washington to fulfill the unexpired term of two years brought about by the resignation of W. A. Kerlin of California.

Then, for a full five year term on the Committee on Laws and Regulations, I am appointing Mr. J. Lyle Littlefield of the State of Michigan to succeed Mr. J. H. Wilson of the State of Missouri.

On the Committee on Liaison with the National Government, I am appointing Mr. Moe Greenspan of New York City to fill the unexpired term of Mr. R. W. Brevoort also of New York. Mr. Brevoort resigned from the Committee because his responsibilities with the City of New York no longer include weights and measures activities. There are four years remaining in this term.

Then, also on this same Committee, I am appointing Mr. Arthur Sanders of the Scale Manufacturers Association to succeed Mr. K. C. Allen of Hobert Manufacturing for a full five year term.

Finally, on the Committee on Specifications and Tolerances, I am appointing Mr. W. C. Hughes of the State of Massachusetts to succeed Mr. H. D. Robinson of the State of Maine.

In making these appointments, I would like to express great thanks to those members who are retiring and I want to wish my best to those who are taking on this new responsibility.

Finally, as I say good-bye to you formally, I wish that the achievements of this Conference will continue to grow and that each of you individually will work hard with the Conference to make it successful. As you encounter problems involving weights and measures in your daily activities, we hope you will discuss them with NBS. I am sure the resources of NBS will be applied continually in the future to the solution of your problems.

I am pleased that on the occasion of the 50th National Conference, this program was cited by the then President Johnson as a model in federal-state relationships. There are still ways that we can improve this model relationship, and I wish you the very best in doing this in the future.

PRESENTATION OF HONOR AWARDS

Dr. Astin presented Honor Awards to members of the Conference who by attending the 53d Conference in 1968, reached one of the five attendance categories for which recognition is made—attendance at 10, 15, 20, 25, and 30 meetings.

AWARD RECIPIENTS

30 Years

H. E. Crawford	Jacksonville, Florida

20 Years

K. C. Allen	Hobart Manufacturing Company
M. W. Jensen	National Bureau of Standards
N. Kalechman	Hartford, Connecticut
W. A. Kerlin	California
W. E. Louthan	Tokheim Corporation
J. J. Seres	Lackawanna, New York
J. F. True	Kansas
W. W. Wells	District of Columbia

15 Years

J. T. Bennick	District of Columbia
J. A. Bovie	Monmouth County, New Jersey
C. G. Gehringer	Hobart Manufacturing Company
J. G. Gustafson	Minneapolis, Minnesota
J. T. Harper	Terre Haute, Indiana
T. C. Harris, Jr.	U.S. Department of Agriculture
O. A. Oudal	General Mills, Inc.
W. M. Sawers	Union Carbide Corporation

10 Years

H. W. Barnes	Veeder-Root, Inc.
R. J. Boney	Trenton, New Jersey
C. A. Cottom	Michigan
W. Czaia	Minnesota
J. A. Hughes	Dearborn, Michigan
W. C. Hughes	Massachusetts
J. H. Lewis	Washington
H. S. Peiser	National Bureau of Standards
J. F. Reilly	National Bureau of Standards
W. J. Schieser	Liqui-Box Corporation
F. F. Thompson	Louisiana

Howard E. Crawford, retired city sealer of Jacksonville, Florida, receiving 30 year honor award from Dr. A. V. Astin.

INTRODUCTORY REMARKS ON THE OCCASION OF DR. A. V. ASTIN'S RETIREMENT AFTER 17 YEARS AS CONFERENCE PRESIDENT

by H. F. Wollin, *Executive Secretary, National Conference on Weights and Measures*

Mr. Chairman, Dr. Astin, ladies and gentlemen. This meeting of the National Conference on Weights and Measures marks the 54th National Conference that has been sponsored by the National Bureau of Standards beginning in 1905. Over this half century or more, the National Conference on Weights and Measures has compiled a highly successful record of achievement, and many dedicated and wonderful people have contributed to its growth and prosperity.

We would like to take a minute this morning to honor one such person who is known to us all, who is held in high esteem by every person at this Conference, and in particular those of us who work at the National Bureau of Standards, who has supported all weights and measures activities whether they are international, national, State or local, and who, as a prominent scientist and leading administrator in the field of science and technology, has provided the leadership for excellence in this nation's system of commercial measurements. I know that all of you join with me when I say to Dr. Astin, "Sir, we sincerely appreciate and thank you for all that you have done for the National Conference and for weights and measures administration throughout the world."

We wish you good luck and happiness in your retirement, and we sincerely hope that you and Mrs. Astin will be able to attend many more National Conferences in the future.

In particular, we would like to invite you to attend next year's Conference which will be meeting in Salt Lake City, in your home State of Utah, during the month of July. We would look forward to having you with us on that occasion.

At this time, I would like to call on Mr. Christie, the Conference Chairman, for a presentation.

DR. ASTIN PRESENTATION

by S. H. Christie, *Conference Chairman*

Dr. Astin, on behalf of the officers, Executive Committee, and the membership of this 54th National Conference on Weights and Measures, I am very pleased to present to you this plaque which is symbolic of our deep apprciation for the number of years you have served well the National Conference on Weights and Measures. Our warmest and sincerest congratulations.

Dr. A. V. Astin, accepting a honory lifetime membership to the National Conference on Weights and Measures from Conference Chairman, S. H. Christie.

Plaque presented to Dr. A. V. Astin, upon his retirement after 17 years continuous service as Conference President.

TO SAVE YOUR LIFE

by P. J. Brown, *Chief, Office of Vehicle Systems Research National Bureau of Standards, Washington, D.C.*

A major emphasis of this National Conference is the practical use of Weights and Measures work in the protection of the consumer. To assist consumers to make an informed choice in the purchase of motor vehicle tires, your Government is developing a uniform quality grading system for tires, as one of the provisions of the National Traffic and Motor Vehicle Safety Act of 1966. In addition, under this Act, the Secretary of Transportation is to cooperate with industry and the Federal Trade Commission in efforts to eliminate deceptive and confusing tire nomenclature and marketing practices. To provide technical assistance for the uniform quality grading system for tires and the development of motor vehicle safety performance standards, an Office of Vehicle Systems Research has been established in the National Bureau of Standards.

My remarks this morning will describe some of the research activities of our office in occupant restraint systems, braking systems and tires. The underlying objective of all of our effort, which is part of the national traffic safety program, is TO SAVE YOUR LIFE.[1]

First of all, consider the matter of occupant restraint systems—the seat belts and shoulder harnesses required by law in our new cars today. A report was recently published on the value and effectiveness of this type of restraint system in some 28,000 accident cases over the past five years involving the Volvo sedan, Models P–11 and P–12. All of these vehicles were equipped with the 3-point safety harness or the combined lap and upper torso strap. The report revealed this startling fact: "Non-belted occupants sustained fatal injuries throughout the whole speed range (as low as 12 mph), whereas, none of the belted occupants were fatally injured at accident speeds below 60 mph." In other words, people were killed in accidents at as low a speed as 12 mph when not wearing seat belts, but survived without injury in accidents up to 60 mph when using seat belts and shoulder harnesses. This dramatic evidence from actual accident records emphasizes again the need for buckling up the seat belt and shoulder harness every time we enter our cars.

To determine the safety performance requirements of a restraint system, our research program is concerned with developing methods of test and measurement that realistically simulate crash conditions. An important factor to be considered is the reaction of live human occupants to the decelerative and impact forces of motor vehicle collisions. Our office has experimentally determined the response of human subjects under crash conditions at the Daisy Decelerator facility of the Holloman Air Force Base. Preparations for the test run included the proper positioning of the angle of the leg, and the loose tightening of 5 pounds tension preload of the lap belt (type 1 restraint system) typical of conditions for most seat belt users. Black dots placed on the head, shoulder, legs, and hip joints served as photometric targets used for film analysis. As a safety precaution our subject used a mouthpiece similar to those used by boxers. The instrumentation included transducers to measure loads imparted to the seat belt and three dimensional transducers to measure the foot and leg muscular effort. After a briefing by the medical officer, our subject was ready for the test run. The sled moved down 123 feet of test track, slowly getting up to a speed of 23 feet per second or 15.5 mph before slamming into the water brake that simulates the impact of a motor vehicle crashing into a solid barrier at 15 miles per hour.

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[1] Our motor vehicle safety research program at NBS is sponsored by the National Highway Safety Bureau of the Department of Transportation. The opinions, findings, and conclusions expressed here today are those of your speaker and not necessarily those of the National Highway Safety Bureau.

Important data in our experiments were gathered by high speed motion picture cameras. One of our 23 human volunteers was filmed at 1000 frames per second on our test hard seat wearing the type 2 restraint system—the combined lap belt and shoulder harness. With the shoulder harness restraining the upper torso, the body movements were not as severe as in the lap belt only condition. All of the test runs were at approximately the same severity of crash conditions, about 14g at the floor of the sled simulating about a 15 mph crash into a solid barrier. When we compared the type 1 and type 2 restraint systems, we found considerably more body movement, along with jackknifing of the upper torso over the lap belt in the type 1 system.

The results of our testing of human volunteers are used in our simulation of crash conditions in the laboratory. Using anthropomorphic dummies and a sled device, we duplicate the impact conditions of the Holloman AFB tests and extend them to much more severe simulated auto collisions (fig. 1). The objective of our research is to determine the safety performance requirements of restraint systems

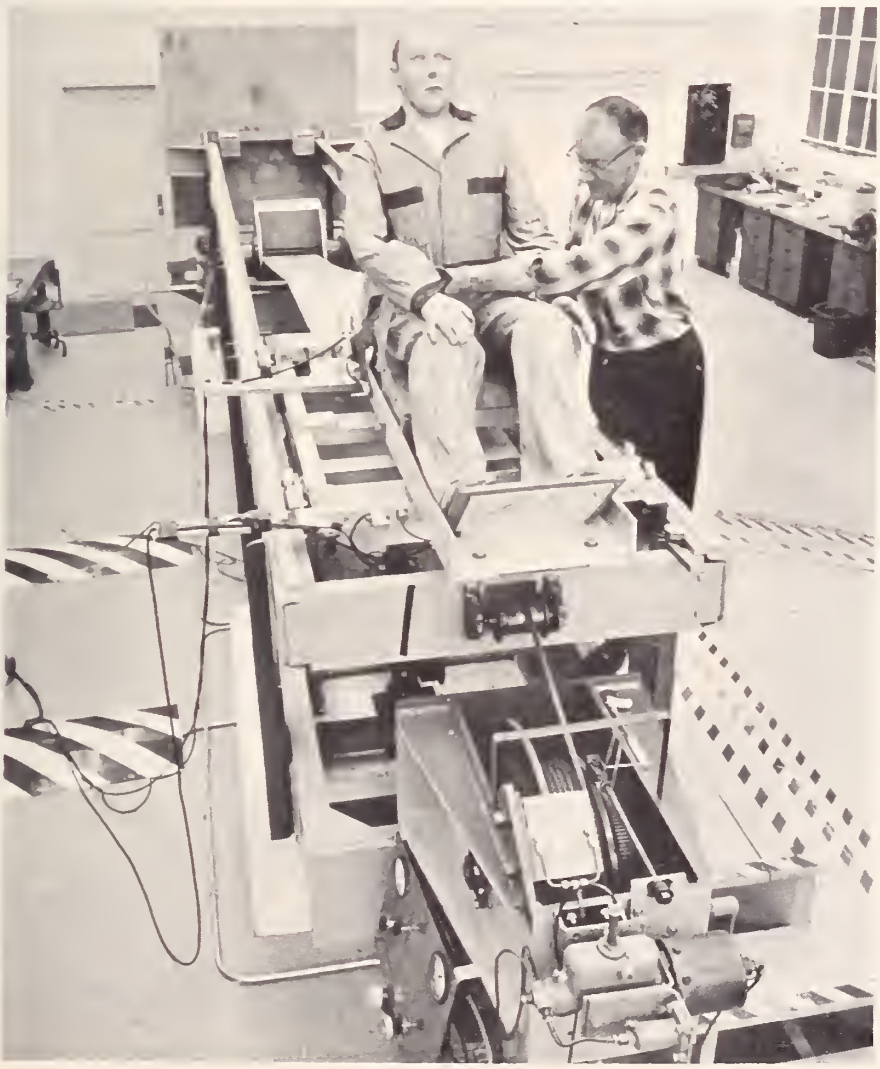


FIGURE 1.—*Dynamic Sled test of restraint systems with anthropomorphic dummy.*

and the methods for measurement of this performance. Having measured the different seat configurations and locations of seat belt and shoulder harness anchorages of the 358 different American 1969 Model Year cars, we evaluate the range and effect upon safety with this device. The lap belt should be tightly secured over what physicians call the anterior superior iliac spine. In laymen's language that is the notch in the forward top of your pelvis or hip bone. The shoulder harness should be loose and adjusted over a clenched fist. Maximum effectiveness of the restraint system is realized in this configuration with the shoulder harness picking up energy after the lap belt has started to load up. This prevents submarining under the lap belt and the upper torso from impacting vehicle interiors.

A second area of our research is concerned with braking systems (fig. 2). Vehicle testing with locked wheel panic stops and at incipient skid conditions are run at the Navy Station at Anacostia. To simulate vehicle braking on the road in the laboratory, we used a brake dynamometer (fig. 3). The large inertia wheels simulate vehicles up to 12,000 lb gross vehicle weight or similar to a light truck. Any mode of braking can be programmed into the equipment through the control console. The braking performance of a servo brake can be compared on the dynamometer and correlated with our vehicle tests. Hydraulic brake fluids and their performance can be critical to the safe stopping of a vehicle. The boiling point of the fluid with water picked up in operation is a major concern and chemical tests are used to evaluate the properties of these fluids.

In our laboratories, we have measured the three types of brake fluids sold in the marketplace and their ranges of boiling points. On a graph we plotted the percentage of added water by weight and its effect on the lowering of the boiling point. The highest band is the so-called "high boiler" used as factory fill for disk brake vehicles. The middle band is the SAE J70R3 or J1703 commonly used on regular or servo brakes. Some auto companies put disk brake fluid in all cars on the assembly line to prevent any mix-up. The lower band of the J70R1 is still available as replacement fluid. After your new car has been in operation for between 6 and 9 months you can expect to have 2 to 3 percent water absorbed by the miscible brake fluid. The most common brakes in our cars, the drum shoe type, operate at a fluid temperature of 185° F. However, disk brake fluid temperatures are 75 to 100° F. higher. Therefore, we are starting to approach critical operating temperatures. When you exceed these temperatures you boil off fluid and lose braking force. We strongly recommend that you replace hydraulic fluid cups and seals whenever you have your brakes relined.

In our tire research program, we utilize road and track vehicle testing, skid trailers and the conventional laboratory wheel as seen in fig. 4.

FIGURE 2.—*Interior of instrumented vehicle for brake system testing.*

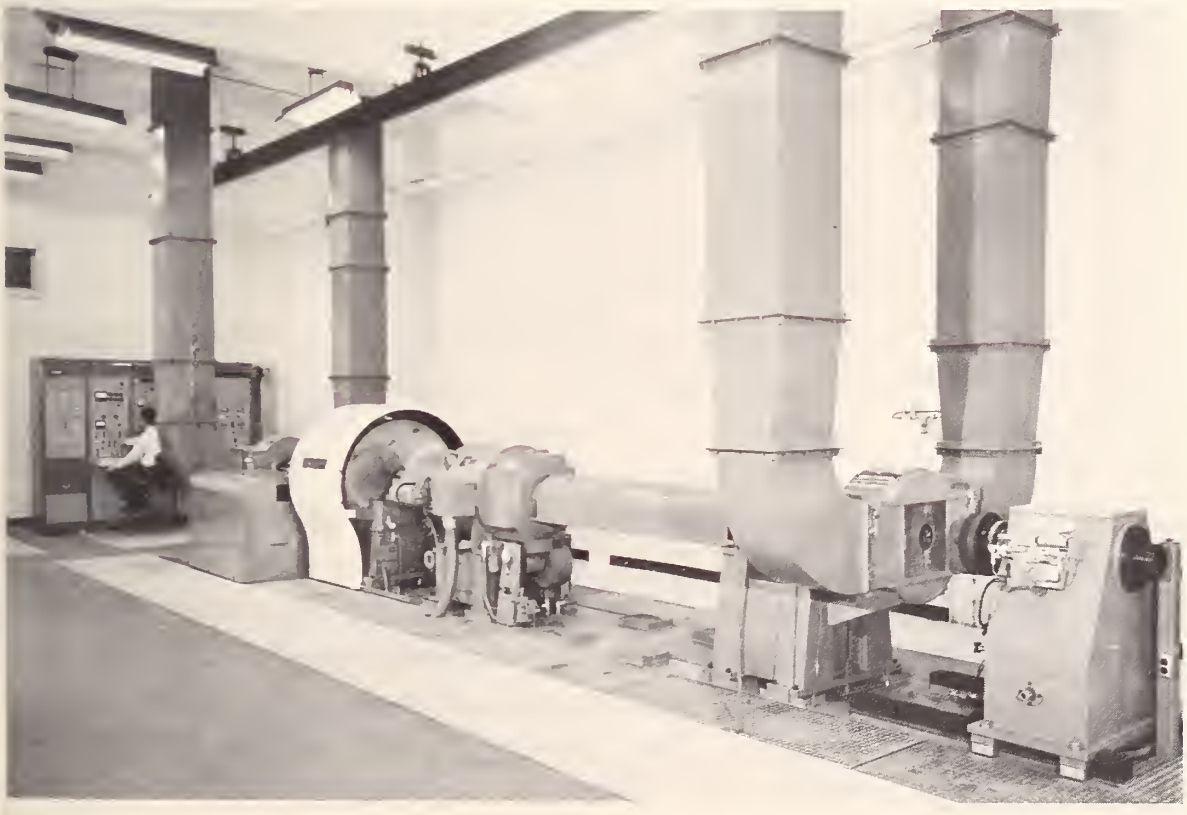


FIGURE 3.—*Brake dynamometer and control console.*

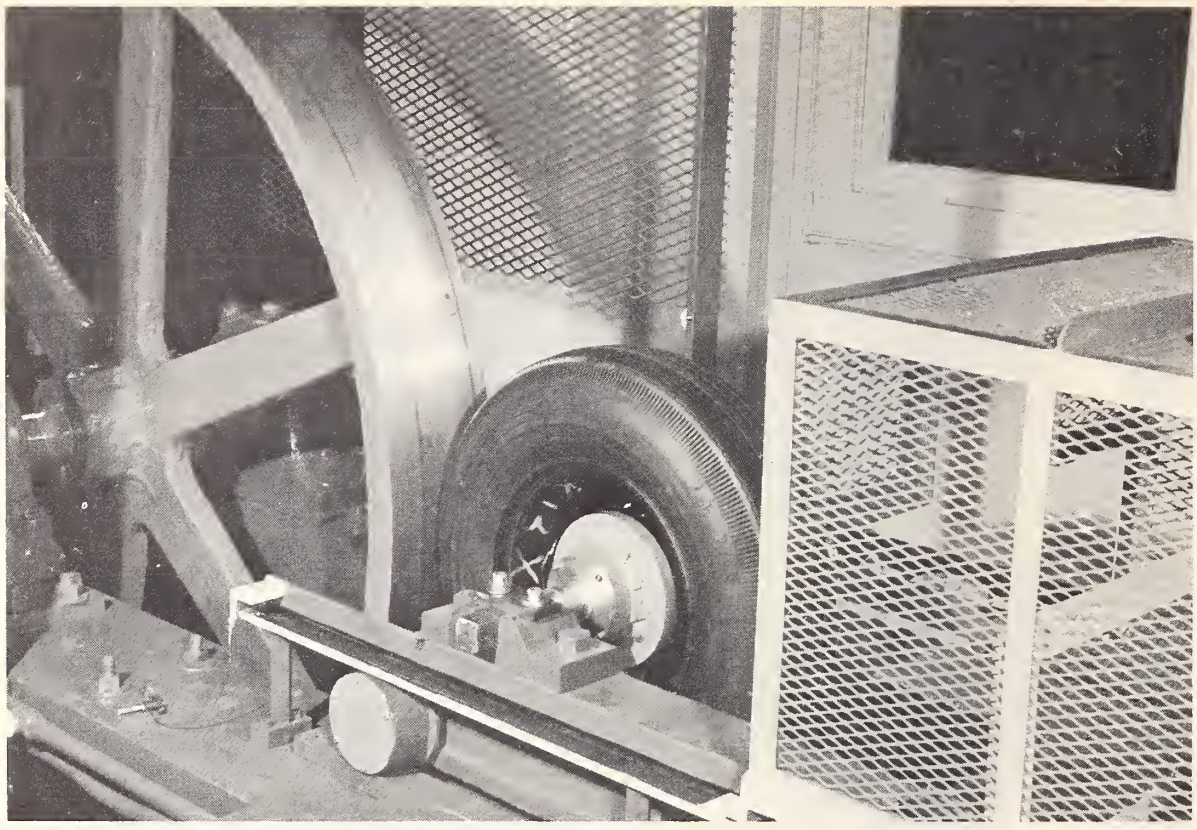
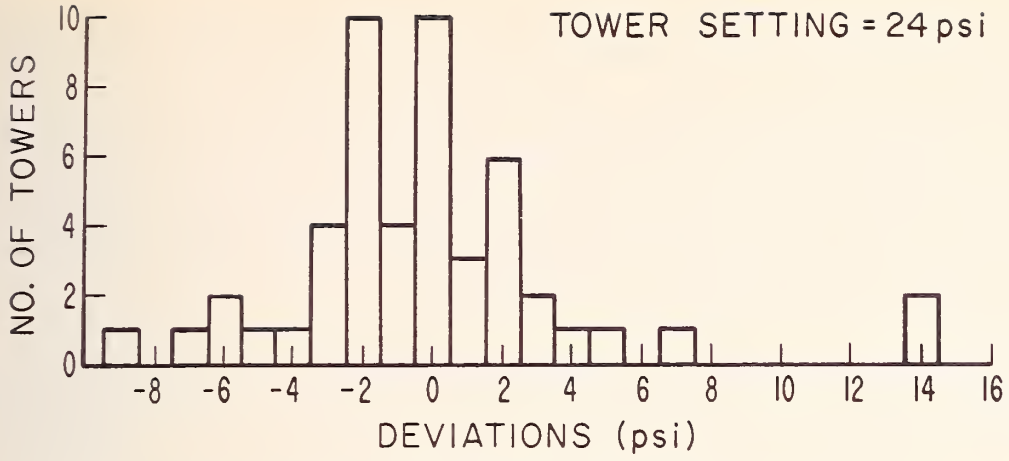


FIGURE 4.—*Laboratory wheel testing of tires.*

The conventional laboratory wheel is 67.23 inches in diameter or 1/300th of a mile in circumference and can be rotated up to simulated vehicle speeds of over 100 miles per hour. The inflated tire under test is impressed against the large wheel at its rated load and at overload conditions to evaluate its high speed and endurance under repeated flexing conditions. Our laboratory has developed the instrumentation to measure the temperature of the rubber of a running tire on a vehicle. Thermistors and thermocouples imbedded in the tire carcass are connected to a miniaturized solid-state transmitter on the wheel rim. Heat sensitivity or heat build-up in a tire is a measure of its high speed capability. Our office is also concerned with development of measurement methods to evaluate traction under wet and winter conditions, impact resistance and tread wear properties of tires. Standard test methods are needed for minimum safety performance standards and the uniform quality grading system for tires.

I would like to bring to your attention a problem we have discovered in one of our surveys related to tire safety. It may be of concern to you as weights and measures officials. An important factor in safe tire performance is the proper inflation of tires. If one checks the inflation pressure at a filling station, how accurate are the pressure gauges in the air towers? We selected a random sample of fifty service stations in our metropolitan area to conduct a survey of the air tower pressure gauges. Air tower readings were measured against our test gauge calibrated to ± 0.10 psi accuracy. Our findings show considerable variation from air tower gauge readings and test gauge readings



INFLATION PRESSURE DEVIATIONS BETWEEN AIR TOWER & TEST GAUGE

FIGURE 5

(fig. 5). An analysis of our data reveals that a motorist has only a 20 percent chance to obtain a pressure within ±1 psi. The probability that a motorist will be getting a pressure which differs by more than 2 psi is 62 percent; of more than 3 psi, 45 percent; and of more than 4 psi, 32 percent. In our survey, the service station managers stated to the best of their knowledge their air towers were never calibrated. In our survey we checked each of the air towers at various pressures and determined that a simple periodic calibration could bring any air tower to an accuracy within ±1 psi. How important is a difference of 2 psi in inflation pressure? Consider the load rating of a popular size tire, a 7.75 x 14. The rated load at the inflation pressure of 24 psi is 1270 pounds. If a motorist underflated his tires by 2 psi the load rating is decreased by 60 lbs. per tire to 1210 lbs.; underinflation by 4 psi decreases the load rating by 120 lbs. per tire. The problem is amplified by the fact that it is obviously impossible to get to the air tower without warming up the tires. An indication of the change in inflation pressure due to the warming up of the tires is shown by our tests of running tires on the highway at 60 mph. The inflation pressure has increased by 6.1 psi before leveling off. This is the reason for not bleeding or reducing pressure on tires that are hot by driving. Underinflation overloads a tire causing greater tire flexing and heat build-up leaking to possible failure. It also causes excessive wear on the outer edges of the tread. Overinflation will cause tires to run hard and make them subject to impact damage. Excessive wear in the center of the tread results. Because of the variation in gas station air tower gauge readings, we recommend keeping a tire gauge in your glove compartment for weekly checks of tire air pressure.

As weights and measures officials, may I suggest that offering the service of calibrating gauges in air towers at filling stations be considered as a public relations gesture.

In this brief look at some of the research activities of the Office of

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Vehicle Systems Research, I hope I have stimulated some thinking and subsequent action by you. Wear that seat belt and shoulder harness every time you drive your car including the short trip to the shopping center. Replace your "wet" brake fluid with fresh "dry" fluid and new cups and seals when you have your brakes relined. Check the air pressure in your tires with a tire gauge from your glove compartment once a week—TO SAVE YOUR LIFE.

ADDRESS OF CONFERENCE CHAIRMAN

by S. H. Christie, Jr., *Deputy State Superintendent, Division of Weights and Measures, State of New Jersey*

As I look over this large assembly of persons dedicated to the cause of honest weights and measures, I am highly conscious of my privilege, as Chairman of the National Conference on Weights and Measures, to officially extend to each of you a sincere welcome and cordial greeting to this, our 54th Annual Conference.

I have attended each Annual Conference since 1940, with the exception of those four years from 1942 through 1945, when the Conference meetings were omitted as a result of National emergencies, and in 1948. Therefore, I am in a position to have noted the increasing attendance, increased sincerity and interest on the part of both industry and active weights and measure officials.

Being somewhat of an idealist upon entering governmental service, I was quite shocked at the general relationship between the Federal and State governments and their several agencies. However, I was pleased to discover the more cooperative Federal-State relationship in evidence at my first National Conference on Weights and Measures. This observation has been constantly reaffirmed at every meeting since. Moreover, I am happy to state that this basic relationship covering cooperation, assistance and integration of work performed on a friendly and proper business plane has been recognized by an authorized group studying such matters. This group made a subsequent recommendation that other agencies should pattern their interrelations in a like manner.

As I look back over the years, it appears to me that we have been provided with exceptionally good leadership under the sponsorship of the National Bureau of Standards. In my opinion, the particular qualifications needed to handle most effectively the problems of a particular era were present in and put to the proper use by the man selected by our sponsor. This is also true on the part of industry and its representatives. For instance, I can remember, and I am sure you will also recall, that period when the top administrative officers engaged

in the manufacturing and distribution of weighing and measuring equipment were the most closely allied with our Conference proceedings. Whereas, during the past few years the technological advances, both in ideas and materials, have placed us in closer contact with the engineers and other technical people. It will also be noted that, due to more States becoming actively engaged in enforcement proceedings, the legal profession is now assuming a considerable role which is paralleling that of the technicians. In addition, I have noticed that during this entire period various trade associations stayed in contact, offering their services and advice in order to assist the Conference.

All this is as it should be. In fact, it may be considered a distinct advantage to have the legal profession more closely participating since it helps to place the public on notice as to what matters are being given consideration and what official action is being taken by the Conference. This is now of considerable importance because most of the States have made provisions, either by statute or by regulation, that the Model Law or the Model Regulations, or the Specifications and Tolerances for Commercial Weighing and Measuring Devices be adopted, together with an automatic adoption of any subsequent changes made thereto by the Conference.

This brings me to the use of the term "Conference" in connection with the name of our organization and its meetings. I am quite disturbed when I hear references made to our "Convention." This we are most definitely *NOT!* We are a body, formally gathered together, for the express purpose of conferring and coming to certain definite, concrete, fair and equitable solutions to problems in our field of endeavor for the good of the entire general public. We do not convene for a limited purpose with a considerable portion of the program devoted to providing those in attendance with "a good time." To me this distinction is of the greatest importance. It is becoming more important as the Conference becomes increasingly involved in making recommendations to the States that are adopted by reference. On this note I respectfully request that each delegate be extremely careful and give due thought and consideration to both sides of any question or problem so that he may come to the proper conclusion.

Recently I was requested to speak before the Spring meeting of the Indiana Association of Weights and Measures Inspectors. The topic given to me for presentation was entitled "The National Conference and You." I found that the subject matter was not easy to discuss as thought of at first blush. Because of this I bring to your attention at this time one or two thoughts which were expressed on that occasion.

This is your Conference. As active Weights and Measures officials who will be entitled to vote on the proceedings that will become laws or regulations, or their equivalent, in most if not all of the States, it is your opportunity to participate and acquaint yourself with the problems presented to your Conference body for action.

Since this is your Conference, every effort is made to have proper and equitable distribution of responsibility geographically, by attendance, by interest and by evidence of participation. The Executive Committee and the various other standing committees are your committees. These committes are not static; because of the revolving method of naming replacements, you may soon find yourself on a standing Conference committee. Meanwhile, during the recess period, from one year to another, your committees are actively exploring all facets of the problems reported to them. It is primarily during this time period that I earnestly and respectfully request that you send your thoughts to them through the Executive Secretary, Mr. Harold Wollin, in order that full consideration can be given.

Your committees have labored long and hard this year in order that they may present for your deliberation and action items of importance, to resolve some of the perplexing conditions that have been of concern. The Committee on Laws and Regulations and the Committee on Specifications and Tolerances have considerable amounts of material which will be presented for your action and which is a result of a thorough study of matters which have been brought to their attention or which have been carried over from past years.

The Committee on Liaison with the National Government fully understands its responsibilities and will have an interesting report.

The Committee on Education and its Subcommittee on National Weights and Measures Week have functioned in the best interests of all of us and an informative report is forthcoming. It is in this area that the Scale Manufacturers' Association, Scale Journal and others are in a position to render valuable assistance in promoting the "Week" and the importance of weights and measures and the enforcing official. The general public is furnished posters, display materials, various types of pamphlets and educational material, window stickers, etc. Even though during the past several years it has been brought to our attention that every week in the year should be devoted to public relations, it is quite necessary to have a particular "Week" set aside to create that "certain impact" which helps to bring about a proper perspective and realization on the part of the public as to what weights and measures really is and its effect upon the average consumer and his community.

Mr. Malcolm Jensen will be missed as our Executive Secretary. I for one am very sorry to have him lose such direct association with our Conference, but it is a pleasure to note that he has left us to accept the position of Deputy Director of the Institute for Applied Technology in the National Bureau of Standards. In this capacity he will still have contact with the Office of Weights and Measures and the National Conference on Weights and Measures. However, I have no doubt he will be pleased to discover that he has left his former position in such capable hands as those of Thomas Stabler and Harold Wollin. I feel that when

I speak for myself, I also echo the sentiments of the members of our Conference when I wish Mac Jensen the success in his new capacity that he is so justly entitled to.

Surprises have a tendency to come in groups, and apparently the Conference is no exception. Dr. Astin's announced retirement is in this category. I cannot let this moment pass without stating that a great deal of the advancements made in the Office of Weights and Measures, as well as that of the National Conference on Weights and Measures, has been due to his unusual capacity for the understanding of human requirements. He is not only a scientist, but also has the capacity to apply scientific accomplishments for the benefit of the public.

I know that you will agree wholeheartedly in my trust that he and his gracious wife enjoy a long and happy retirement, granting themselves the personal benefits of friends and pursuits, particularly those that they have deprived themselves of during his long public service.

I wish to take this opportunity to express my most sincere appreciation for the cooperation I have received from the officers and members of the National Conference during the past year. I wish to acknowledge publicly my thanks to those members of industry and other Weights and Measures Officers who have given so freely of their time and effort so as to help resolve problem areas and which, in turn, contribute so vitally to the success of the Conference itself.

The Chairmen of the various Conference Committees and their respective membership have my most sincere regards and appreciation for their honest concerns and endeavor in the fulfillment of their obligations. Also my most sincere appreciation to both Mr. Malcolm Jensen and Mr. Harold Wollin who acted as our Executive Secretaries during the past year, and to their staff, in covering the complex problems and the smallest and usually nagging details that are of necessity attached to the planning and operation of a Conference of this size and importance.

Now that the Fair Packaging and Labeling Act is beginning to function and some of the problems attendant to its set-up are being ironed out, it appears to me that "consumerism" is continuing to be on the rise. Although there are many problems which the consumer appears to be heir to, it is my personal opinion, where quality is determined by some function of weights and measures, it should be properly placed under the jurisdiction of those officers overseeing these functions. This would leave problems mainly associated with certain disobedience of legal matters, such as contracts, in the hands of those most competent to handle such situations.

During the past it has always been difficult to have true representation of the consumer and his protests. With the advent of the consumer boycotts, and other publicity means, the Federal Government as well as the several States found it necessary to accept the fact that con-

sumer representation is vital and is apparently here to stay. This has caused more States to incorporate as aides to the Governor persons who can truly represent or speak for the consumer in general. In this regard I am highly pleased to note that President Nixon appointed Mrs. Virginia Knauer to act in such a capacity to him, as she comes to Federal service with a background of experience gathered in the State of Pennsylvania, plus the fact that she is also a busy housewife and consumer in her own right. The message she will bring to us during our luncheon meeting on Wednesday should be of real interest and concern to our group.

We are now ready to begin with the official proceedings of the Conference. With your attendance, full cooperation and participation I am sure this 54th Conference shall be a success for all.

AFTERNOON SESSION—TUESDAY, JUNE 10, 1969

(C. B. Wнigham, *Vice Chairman, Presiding*)

ACTIVITIES OF THE OFFICE OF WEIGHTS AND MEASURES

by T. M. Stabler, *Acting Chief, Office of Weights and Measures, and Staff*

At these annual reports by the Office of Weights and Measures, it has been customary practice to introduce staff members who have joined the OWM team since the preceding Conference. It is my pleasure to present three people who we are certain will make solid contributions to our program.

Mr. Robert Mills, Physicist, formerly an NBS employee in Atomic Physics, will now supervise the Standards and Engineering Units.

Mr. Arthur Poling, Engineering Aide, former laboratory technician in the Length Section at NBS, is now working in our Standards and Engineering Laboratories.

Mrs. Marilyn King, Secretary, will grace our halls and great you with a cheerful "Office of Weights and Measures" when you call our office.

While I am engaged in the business of staff introductions, I consider this an appropriate time to toss bouquets. I would like to express a special word of appreciation to our secretarial staff for their excellent cooperation and effort throughout the year and particularly at Conference time: Mrs. Evelyn Burnette, Mrs. Frances Bell, Miss Jo Ellen Adams, Miss Sharon Beall, Mrs. Joyce Donivan, and Mrs. Marilyn King.

With the expansion of our staff to 24, our program activities have also expanded.

1. In 1968–69 we conducted training for nearly 1,000 weights and measures supervisors, inspectors, laboratory metrologists, and industry representatives. We plan to conduct an advanced course in Weights and Measures Administration for supervisory personnel November 17–21 at the University of Colorado at Boulder.

2. Standard quantity patterns have been established for 35 packaged commodities under the Fair Packaging and Labeling Act.

3. A dozen or more engineering problems have been studied or are presently under investigation. These include LP-Gas vapor-meter codes, taximeter and rental vehicle odometer test procedures, paint can measurements and test procedures, calking compound test procedures,

and procedures for testing moisture content of grain, to mention a few.

4. Thirty prototype commercial weighing and measuring devices have been examined for compliance with NBS Handbook 44 requirements. The most recent was a conveyor scale near Denver examined by NBS in cooperation with the Colorado Weights and Measures Department.

5. New weights and measures standards have been installed in ten additional States, bringing the total to thirty States with completed laboratories. Forty States will be equipped by the end of next year. (As a sidelight, this month I will travel to the Republic of Korea to install new metric standards through a cooperative NBS-State Department program.)

6. Information dissemination—the National Conference Report, Tech Memos, technical reports, letters, telephone inquiries—continues at an ever-accelerating pace.

7. The Railway Track Scale Testing Program has had delays and postponements because of mechanical failures due in part to antiquated equipment and to rough handling by the railroads. Test cars have been damaged on at least two occasions and have required extensive repairs exceeding $25,000.

Now, let us turn to the future and our program for 1969–70.

The National Conference on Weights and Measures will continue to receive major attention. This is a most valuable institution and sounding board for weights and measures and industry. It is an excellent vehicle for the exchange of information and will become more effective still with greater involvement by officials and industry representatives.

There will be significant additions to the Office of Weights and Measures Technical Education Program. We will emphasize regional training schools for inspectors. Two benefits should result: (1) improved communications and uniformity between neighboring State jurisdictions; (2) increased educational opportunities for officials and industry representatives in NBS sponsored programs. We will assist the States in planning their schools and in the training of a State official designated as "Training Officer." This program is currently in operation in several States. The training officer conducts courses for new inspectors, state and local sealers, and plans a Statewide annual or semiannual school which often includes industry participation.

Added emphasis will be given to training of weights and measures supervisors. Regional schools will be taught in an effort to bring supervisors together at least annually to air mutual concerns and to benefit from a program of philosophical, theoretical, and motivational instruction. Outside guest speakers will share teaching responsibilities with the OWM staff.

A new program at the Office of Weights and Measures is one that is designed to assist NBS and the States overcome any communication gap that may exist. A visit to each State office at regular intervals will be planned. Hopefully, this will prove to be mutually beneficial—to help identify problem areas and to enable OWM to more effectively serve weights and measures and industry. We would like to spend a day or so with the State director to review his program, to meet his staff, and to learn how we at NBS may maximize our assistance.

We have recently initiated the State Laboratory Auditing Program. We have invited the States to enroll their metrology laboratories and technologists. This NBS educational program is designed to supplement the basic training and should prove extremely valuable as a monitor of personnel and laboratory capability, instrument performance, and accuracy of the State standards. Standards and procedural problems are exchanged between NBS and the State laboratories and the resulting data compared. There are 14 laboratories enrolled at this time, and we eventually hope to include all State and certain industry laboratories.

Perhaps the most far-reaching program to receive recent attention is that of "Management Consulting." We are considering the development of model weights and measures administrations employing automatic data processing, cost benefit analysis, sampling, planning-programing-budgeting, and other techniques available to modern management. The plan is to offer management consulting services to weights and measures administrators, as it is our belief that uniformity and effective and efficient weights and measures supervision begins at the management level. By invitation, we will consult with officials, review existing programs, and, following thorough analyses, present formal proposals. Considered will be the areas supervised (economy, population), the laboratory program, budget, personnel, training, equipment and so forth.

We at the Office of Weights and Measures will continue to reevaluate our programs and responsibilities to enable us to serve the Nation's commerce effectively and to keep pace with the ever-changing requirements of our profession.

INFORMATION PROGRAM OF OWM

by R. L. Koeser, *Weights and Measures Coordinator*

My responsibility this afternoon will be to discuss with you a little bit about our weights and measures information program. What it is, what it isn't, its strong points, its weak points and our future plans for the program. One of the many nice things about being part of conducting an information program is some of the entertaining letters we get to see. Let me share a few with you.

Dear Sir:

This request may sound a little unusual, but I have to settle an argument. When you mount a roll of toilet tissue into a roll receptacle—what is the correct way? Pulling the paper out from underneath or out and over the top?

Here's Hoping,

Dear Sirs:

I would like to know if you would answer some questions? How do you decide whether to measure by liquid standards or by solid standards? It is very hard to measure at times. Hope it is not too hard for you. Where do you go if you measure it wrong—do you get put in jail or get arrested? Well I have got to close, write me soon.

Your Friend,

We enjoy these letters immensely and thought we would pass them on to you.

With the help of a flow chart (see fig. 1) let me take you step by step through what a weights and measures information system should look like.

The reasons for, and the benefits of, an effective information system are obvious. The weights and measures officials in Maine will not profit from the findings of an official in California, or a weights and measures article appearing in *Package Engineering*, if it takes two years for the information to find its way to him. Similarly, if an inspector in Maryland finds a better way to inspect packages, the benefit of this hard won know-how will not circulate unless there is an adequate means for passing that experience on. One could make a similar case for the information flowing from international sources to the United States.

Figure 1 is an illustration of what we have in mind—an information system designed to serve the needs of weights and measures officials, consumers and industry.

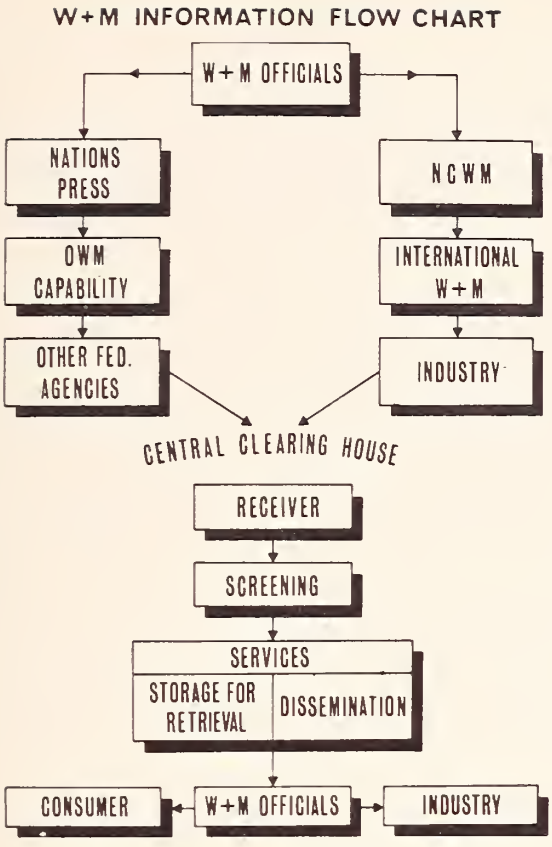

FIGURE 1

We have to start with a central clearinghouse for our information and that responsibility rests on the shoulders of the Office of Weights and Measures. This concept of establishing the Office of Weights and Measures as a central clearinghouse is not new. In 1940 at the 30th National Conference on Weights and Measures, Dr. Briggs, President of the Conference said, "I have this suggestion to make. It seems desirable to have the Office of the Secretary of this Conference act as a clearinghouse for information which is of interest to the State officials." In recent months the subject has been brought up with more regularity and we felt it was time we established something more definitive in this area.

Where does the central clearinghouse get this information? As we can see from figure 1, the rectangles (input) above our central clearing house represent the sources of information. Starting from the center we have:

1. Weights and measures officials in the 50 States.
2. The nation's press.
3. Other federal agencies.
4. Industry.
5. National Conference on Weights and Measures.
6. International Weights and Measures.
7. Office of Weights and Measures capability.

Since you are the chief benefactor in this program we hope and anticipate that you will be one of our chief contributors.

Let me point out at this time that other communication sources, such as regional and State newsletters, are by all means welcome. We are working from the national level, with national emphasis, and all other dissemination facilities are a necessary part of our program. So by all means, New York State and Kansas Newsletters please hang on, we need you.

All arrows lead to the central clearinghouse, but the arrows also interconnect with other information sources. This gives the system freedom of movement. For example, an article in our nation's press that we are not aware of could get picked up by an official in Wisconsin, used there for immediate purposes, and sent on to the central clearinghouse where it would be given national coverage.

Upon receipt of this information it is screened for two things (1) storage and retrieval, (2) dissemination. Let me briefly explain our methods of storage and retrieval. If our information is to be stored we would use one of the following methods: (1) National Archival Weights and Measures Library, reference or archives section, (2) subject files, (3) slide file—with over 1,500 index slides, and (4) photo file—with over 2,000 pictures.

In the area of information dissemination, we plan to make our greatest strides. This is an area where we have not placed enough emphasis in the past. We like to think, along with the Washington Senators, that "It's a whole new ball game." This area includes memos and letters to the States—answering of inquiries—tech memos, publications (official), technical training schools, films and slides.

We have recently added a new communication entitled "Articles of Interest to Weights and Measures Officials." It's a digest of weights and measures articles. We receive over 90 periodicals in our library and most of this information is scanned by our personnel, but unfortunately, it doesn't reach the States. We feel this digest is an excellent source of current information for the weights and measures officials. I believe this communication is a step in the right direction.

Sometime during the Conference, step up and give us your candid opinion on this new communication. If you like it—we are ready to roll every two months. In addition, we plan to index this information for you at the end of the year so it can be added to your permanent files.

We are considering the possibility of setting up information centers in each of the 50 States. This would include, among other things, three-ring notebooks given to the States covering the areas and problems you gentlemen face daily—public relations, training, education, laws and regulations, specifications and tolerances, etc. As additional information is made available it will be sent to the 50 centers to keep current your information systems.

Briefly finishing up on our flow chart, we find that our services are directed toward 3 groups (1) weights and measures officials, (2) industry, (3) consumers.

Why is this subject of information and communications important? Why should you as an individual weights and measures official care? The reason is obvious. This information is the backbone of our educational system both to the public and ourselves. Let's face it, we have a long way to go and it is no big secret that if weights and measures enforcement is to advance to the degree of prominence it deserves we must continue to educate ourselves and, most importantly, we must educate our consuming public. We must educate the public to realize the true value of our services. When the demand for weights and measures control comes from the public, our jobs become more rewarding and meaningful.

It is our job as members of the National Conference on Weights and Measures to get the public interested and involved in our work, and as Ralph Waldo Emerson said: "Skill to do comes of doing."

SEARCH AND SEIZURE

by R. A. Vignone, *Attorney Advisor*

That's a pretty difficult act to follow, Ross. I am afraid my material is not as witty as Ross's. It may be because my writers are the Supreme Court Justices. When Tom asked me to briefly discuss the present status of search and seizure, I thought long and hard and came up with the following advice: Be careful.

I could obviously go a bit further and delve into vague generalities, just like the courts do, and advise you to be reasonably careful. The term "reasonable" is one of the handier words in law. If the court were ever to define "reasonable," "substantial," and "probable," 50 percent of the lawyers in the U.S. would be out of work. If they went further and explained "consumed or expended" and "proliferation," 95 percent of the lawyers would be out of work. And I never did know what the other 5 percent did. As Mac Jensen has often said in his talks on Fair Packaging and Labeling, he was getting the impression that FPLA stood for Full Practice for Lawyers Act.

I must preface my comments with the following statement: The views and opinions expressed by me are not necessarily those of the Department of Commerce, the National Bureau of Standards, nor, can I truthfully say, those of the Supreme Court.

If I had been given this assignment five years ago, it would have been a relatively simple task. The controlling law at that time was *Frank vs. Maryland*, 13590.S.369 (1959). This case dealt with an inspection of a private residence by a Health Department employee who was attempting to substantiate the fact that the premises had rodent problems. The court held that the facts in that case were not a violation of Constitutional rights or an invasion of privacy, and that it was within the police power of the state for purposes of health, safety and welfare to conduct such inspections. This philosophy or approach to inspection in Maryland had been the controlling law since the 1780's.

Dissenting opinion in the *Frank* case was adamant. Warren, Black, Douglas, and Brennan cast the four negative votes in the 5–4 discussion. Their basic claim was that the fourth amendment of the Constitution afforded more protection than the Court's majority recognized. Their opinion was that the fourth amendment provided for protection from the uncontrolled discretion of an administrative inspection in the field and guaranteed that authorization for a search must be more legitimately based than upon the mere display of an identity card.

They did, however, recognize the need for the area-wide administration inspection and indicated that the showing of somewhat less than the classic probable cause would suffice.

The *Frank* case was again upheld two years later in *Eaton vs. Price*, 364 U.S. 236 (1960), where even less probable cause existed. However, in 1967, when *Camara vs. Municipality Court*, 387 U.S. 523 (1967), came along, it was no great surprise, with Frankfurt and Whittaker no longer on the bench, that the *Frank* case was overturned. Abe Fortas, a longtime friend and admirer of Douglas, joined in with the dissenting group, and the dissenting opinion of *Frank* became the majority opinion of *Camara*.

The *Camara* case held that the occupant has a constitutional right to know certain things: Whether the enforcement requirements require the inspection of his premises, what the lawful limits of the power to search are, whether the inspector is properly authorized, and that the procedures for the inspection are well defined.

When the right of privacy must reasonably yield to the right of search, as a general rule it was held that the decision should be by a judicial officer and not by the police or government agency.

The Supreme Court, in a companion case, *See vs. Seattle*, 387 U.S. 541 (1967) (a case of great pertinence for weights and measures officials), ruled that the issue did not involve a private residency as in *Camara*.

Camara deals with a building code inspector attempting to gain access to a private residence and being refused. The California Ap-

pellate Court held that *Camara* was in violation of California law. However, the Supreme Court held that a warrant was required in the search of Camara's private residency.

The *See* case goes one step further in that it involves commercial property. A fire inspector, in attempting to gain access to a locked warehouse for a routine inspection, was refused. The Washington courts held See was in violation of Seattle law. The interesting aspect, to this audience at least, is that the Supreme Court found that this right of privacy goes to a commercial establishment, although they did not define to what extent it applied.

These two cases do not preclude enforcement of administrative laws and regulations. By their own terms, the court recognized many avenues which remain open for enforcement. One is the consensual search. This could be obtained by a weights and measures official or some administrative official when he goes into a supermarket, or whatever, identifies himself to the person in charge of the operation, informs him of his purpose and intent to conduct an investigation, and is given permission to perform his duties.

A case that followed the *Camara* and *See* cases was the *U.S. vs. Stanack Sales Co.*, 387 F.2d 849 (3rd Cir. 1968), which dealt with a Food and Drug Inspection of a New Jersey drug house.

The Food and Drug inspector was permitted at first to enter the premises and inspect. However, at a later point, the authority was revoked. The Government claimed he waived his Constitutional rights when he permitted the inspection. The court held that whereby the waiver of a Constitutional right is permissible, it must be clear and intended, and this was not found to be the case in this matter.

An emergency search is a recognized avenue of search where, for example, health inspector condemns cattle or contaminated food. This would not seem to have too direct an application to weights and measures work.

However, an important area that remains open does have application. Public premises, buildings open to the public, are still apparently subject to warrantless inspections. The *See* decision spoke of premises not open to the public, consequently, the public areas of restaurants, bars, supermarkets, and gasoline stations are presumably available for inspection.

Another category, licensed premises, also finds some applicability with your work. Licensed premises are still subject to inspection. Clearly, inspection is a condition of obtaining a license, and presumably a condition for continued operation.

I feel that the court, in the *See* decision, intentionally neglected to rule on the accepted regulatory techniques of such licensing programs. They may not have ruled on this in order to avoid the inevitable effect such a ruling would have on present inspection procedures.

Any Constitutional challenge to such a program as licensing can only be resolved on a case by case approach under the fourth amendment concept of reasonable search and seizure.

A California Appellate case, again, after the *See* and *Camara* case, rejected the need for a warrant in a licensing case. They interpreted the prior inspection language as not being taken in its literal sense, because if this construction were taken literally, it would have meant that the premises would never have to be inspected after the initial license was granted and this could not have been the intent of the Supreme Court.

In your work, you should consider the thinking of the Supreme Court and its apparent concern over the unbridled arbitrary discretion exercised in the field. The State of California has proposed legislation to clearly spell out the prerequisites of inspection warrants.

Needless to say, the Justice Department has also expressed great concern with the findings of the *Camara* and *See* cases when they were first handed down in 1967. Last year, the Department proposed legislation to the Congress which wasn't acted upon because it was submitted a little too late in the term. However, they have again resubmitted the proposal which is called the Administrative Inspection Warrant Act. The proposal spells out the authority to issue warrants which would be vested in an agency head or delegated to a designated person in the agency.

The Act includes a definition section. The definition of probable cause is given as meaning "a valid public interest" and, of course, all of the other portions of due process are spelled out in the Justice Department Act.

If any of you experience any difficulty in your respective States with inspection procedures as related in these cases I have discussed, inform me and I will develop a Model State Inspection Warrant Law closely paralleling that of the Justice Department, fulfilling all of the requirements spelled out in the *Camara* and *See* cases, for the consideration of the National Conference on Weights and Measures.

Again, I must emphasize that it is arbitrariness that leads to trouble. For example, in a recent Supreme Court decision case handed down just a few month ago, *Stanley vs. Georgia* (1969), federal and State police officers entered the premises of Stanley's home looking for evidence of alleged bookmaking.

After going through the downstairs portion of his home, they proceeded to the second floor and in one of the bedrooms in a closed drawer they found three reels of eight millimeter film. They took the film to another room on the second floor where they found a movie projector. After they set up the projector, they viewed all three of the films and concluded that they were obscene. (It is interesting that they had to view all three rolls before reaching this conclusion.) They charged

Stanley with possession of obscene materials. This case clearly shows arbitrary action on the part of the officials. When they could not find pertinent evidence of illegal bookmaking, they arbitrarily expanded their search to, in effect, find something with which he might be charged. The Supreme Court over ruled the Georgia Court because it was an illegal search.

The Court in the *Camara* and *See* cases stated that enforcement officials should continue to inspect and only seek a warrant after having been refused access. The Court is of the opinion that business people will continue to grant administrative inspections.

The court appears to be speaking out of both sides of its face. On the one hand, they say they want you to have a warrant, and then they say you don't really need one. With Warren and Fortas gone, and Marshall never having voiced an opinion on the subject, I think we could have a new outcome if another test case were to be brought before the Supreme Court.

OPEN FORUM

This year the Open Forum was held in three concurrent sessions covering three subject areas: 1. Weighing, 2. Measuring, 3. Merchandising.

All sessions were well attended and apparently a huge success. The Forum's main purpose was to bring together people with specific interests in weights and measures to discuss and exchange ideas. Members of the staff of the Office of Weights and Measures served as moderators.

OPEN FORUM ON WEIGHING

R. N. Smith, *Office of Weights and Measures, Moderator*

The first half of the session will be devoted to large capacity scale testing units. Four different types of testing units will be discussed, and, for this purpose, we have assembled the following panel: Mr. J. C. Stewart, Assistant Supervisor of Weights and Measures in the State of Virginia; Mr. Warren Czaia, Supervisor of Weights and Measures in Minnesota; Mr. Lacy DeGrange, Field Supervisor for the Maryland Weights and Measures program; and Mr. Everett Black, Director of the Ventura County, California, Weights and Measures program. The panel will give you an idea of the scale test units in use today.

363-611 O—69——4

LARGE CAPACITY SCALE TESTING UNITS

J. C. Stewart

Figure 1 is one of three type units that we have in the State. This newest unit has a capacity of 26,000 pounds of known test weights. It has additional space for 9,000 pounds more test load; however, the laws limiting the weight on highways will only permit us to add 3,000 more pounds. A two-wheel manually operated dolly is used in the inspection of livestock scales and for moving weights around on some special scales.

The operator never has to move from a fixed position to hook or unhook the test weights, either in the truck or on a scale deck. One of the advantages of this unit is that a load of 26,000 pounds can be concentrated in a very small area. The door immediately in back of the cab opens into a compartment that houses an air-cooled engine. We installed this engine for the purpose of saving the truck motor. It has sufficient horsepower so that it can operate at the same or greater speed than a power take-off unit.

Figure 2 shows that this is a short, compact unit. The boom at the top extends out far enough over the scale deck so that end section tests can be made without having to move the truck during the time the weights are being unloaded. In nine minutes, all 26,000 pounds of test weights can be placed on the deck without having to move the truck.

Inside the left door are the controls for operating the dolly system. This truck has a cable and drum system to operate the trolley used for loading and unloading the test weights.

The truck can be parked in an unlevel condition and the weights can be lowered. With this particular weight lifting setup, the operator can get close to the weights, drag along the hooks, and pick the weights up. It is similar to picking up something on the fly, and we feel this hooking arrangement will save us time.

DISCUSSION

Mr. C. Wooten: (Florida) My question concerns the wheel base. In your presentation you mentioned that your three units have three different wheel base lengths and three different weight loads. Do you ever use your longer wheel base truck to recheck a scale that had been rejected with one of the short wheelbase trucks? Would this make any difference in your checking of the scale, particularly in your strain load testing?

FIGURE 1.—*Newest and largest Virginia test unit.*

FIGURE 2.—*Rear of Virginia unit showing test load.*

Mr. Stewart: The trucks do have three different wheel bases. Unfortunately, the new truck has only been in service for about eight days and I really couldn't say what we're going to find with it. The other two are only about a foot different in wheel base, and we have on occasion used both units at the same location. We have seen no difference in test results.

Our new truck is about three feet longer in wheel base and it will be operating in an area that will be overlapping in some cases with the other units. This will be something we will look out for.

Mr. Johnson: (Kentucky.) How do you determine the maximum test load capacity of a section? In other words, what is your maximum test weight load per section, of a four section scale?

Mr. Stewart: This is based partly on the nominal capacity. Seldom do we have a particular vehicle scale that will not take the test weight load on each section that is on the vehicle we have at the site. We have had many occasions where we cannot run a strain load test because of the scale capacity, and we have had occasions where we had to reduce the section test to 12,000 or 15,000 pounds; but this is a judgment determination, made by the inspector at the site. It is based on the capacity of the indicating elements, the condition of the deck, and the general condition of the scale itself.

Mr. Johnson: Do you have a rule of thumb that would limit you to a maximum of a quarter capacity over one section of a four section scale, or maybe a half capacity?

Mr. Stewart: We place all the weight we can reasonably get on each section without damaging the scale. We have a number of 15 ton scales where we put 20,000 pounds over each section. Of course, they are mostly two section scales.

Mr. Wooten: Do you ever use your truck to compare sections and if you do, what position is it used in? Is it over each section or do you take three positions on a four section scale?

Mr. Stewart: Upon arrival at the scale, we unload our dolly. If it is a four section scale, we place the dolly as close to the ends of sections one and four as possible and take a reading. We do the same on sections two and three. If these readings are out of tolerance any appreciable amount, and I'm speaking now of amounts of 100 pounds or more, we discontinue the test. In some cases we will take the worst one of the four sections and drop the 20,000 pound test load at one time to see what the error is. If it's out of the applicable tolerance, we will discontinue the test. In some instances we use the loaded test truck on each section to determine whether or not they compare. If we find one section out, we drop the 20,000 pound test load on that section and, if the total error exceeds the tolerance, we discontinue the test.

This will be a factual and unbiased oral and pictorial description of our biggest and newest heavy duty scale testing unit. I shall try to show how the equipment is used and to express what, in my estimation, are its positive points and its limitations.

Please bear in mind that we operate this unit to a great extent in grain terminal scales. This includes all large four section or five section scales as well as other large motor truck scales mostly located in the metropolitan areas in Minnesota. We also test all of the Highway Department scales with it. I would ask you to bear in mind that Minnesota has a very cold climate. We have a lot of snow in the winter and this influences the type of equipment that we can use.

Our senior heavy duty scale inspector is here with me, to answer any technical questions regarding the equipment or its use.

Figure 3, our newest unit, is a semi-tractor trailer 50 feet long, which is the legal length for Minnesota. It has five axles enabling us to carry the largest legal load in Minnesota: 73,000 pounds.

We use two 2,500 pound power operated dollies with this unit. We normally carry six 2,500 pound weights, four 2,000 pound weights, six 1,000 pound weights and forty 50 pound weights. We also carry our own power source with us—an "Onan" generator. It generates 220 volts, A-C current, three phase, and supplies the power to operate the motor trolley, and dollies.

We also have a D-C unit that is not quite as big as our 50 foot unit. It is also a semi, but has one less axle and it carries two 10,000 pound test units. At the time it was developed, we found that with DC current, we would have better control over the dolly movement. We have had less trouble with maintenance of the dollies, particularly breaking

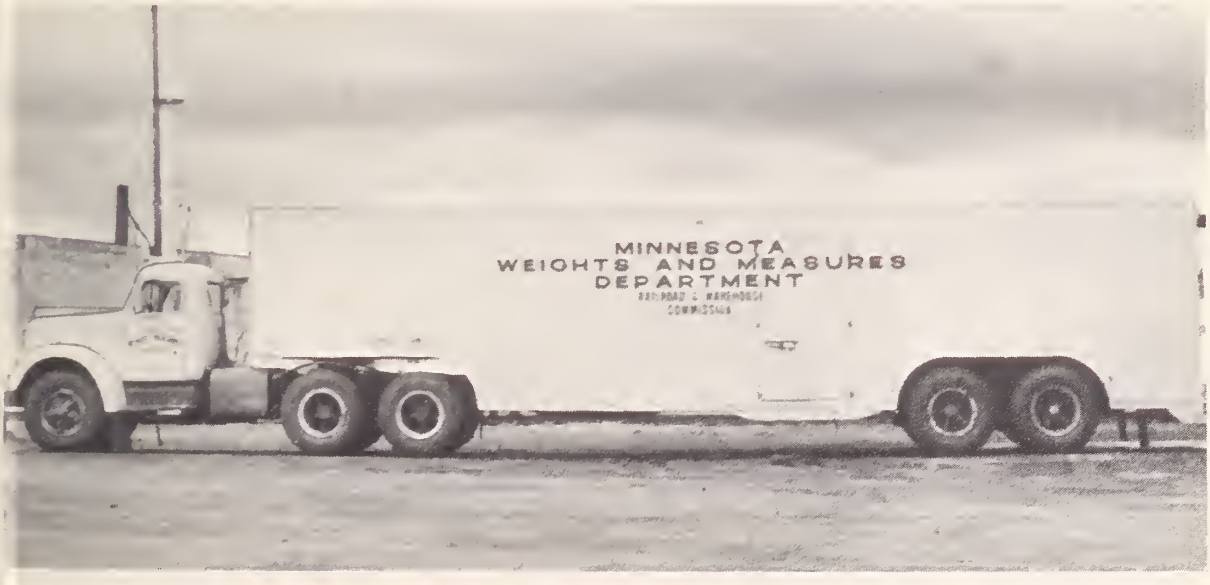

Figure 3.—*Newest and largest Minnesota test unit.*

of axles, because of the better control over its movements. Also, the electrical portion of the unit seems to be heavier and we have less problems in this area.

I should remind you that we still operate a load bearing test in Minnesota. We do not stick strictly to sectional tests. Our regulations cite that a load bearing can be 1½ times the tolerance of the section as long as the aggregate of the two load bearings are not more than the sectional tolerance.

There is a big advantage to using an electric dolly, as seen in figure 4, rather than a hand dolly. We would put, if possible, ¼ of the nominal capacity of the scale over any load bearing. We would put ½ nominal capacity over any section, and total nominal capacity, over any two sections of the scale.

We have been doing our best to adhere to a tolerance of one pound per thousand for maintenance and one-half pound per thousand for acceptance tests.

In Minnesota, we use ratio weights during our testing. I wasn't aware of it, but I understand ratio weights aren't widely used throughout the country. We do not necessarily use correction weights on the deck. By the use of the ratio weights, it is not necessary for the inspector to run out to the deck each time a reading is taken.

We also use a tip indicator on our beam scales, feeling that we can record errors a little closer. The inspector attaches the tip indicator on the beam, balances it out, and then determines the sensitivity of the scale.

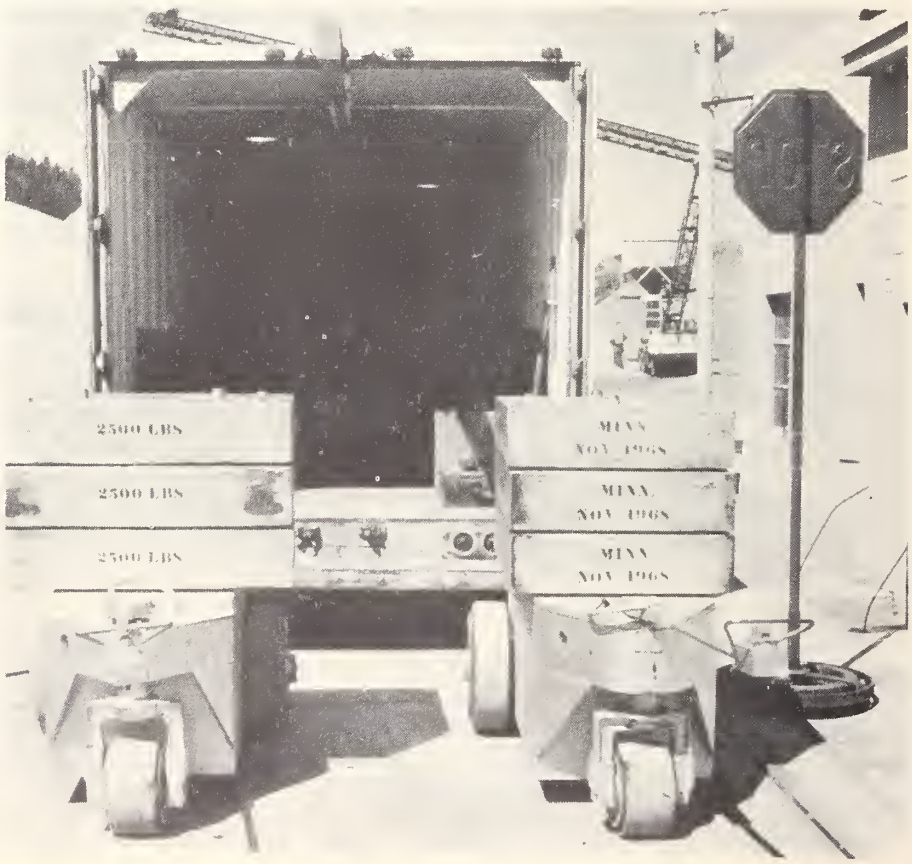

FIGURE 4.—*Electric dollies used for 20,000 pound section test.*

In addition to our newest unit, illustrated in figure 5, we have three others. One is equipped with 10,000 pounds of test weights, another with 12,500, the third with 15,000.

Two of them are very similar in their weight carrying capabilities to those you saw from Minnesota. They are electrically operated and use block weights.

The cost of this unit was just a little under $34,000. The test load includes 45–1,000 pound block weights and a 500 pound weight. The gross weight of this unit, less the driver, is approximately 73,600 pounds.

The length from bumper to bumper is 48 feet, 7 inches. From the center of the front hub to the rearmost hub is 43 feet, 5 inches, a length that will enable you to place the unit on a 45 foot scale.

The trailer has a 35 foot drop deck. This provides a barricade for the weight so in the event of an accident, the weights would not come forward onto the driver. In addition, the upper part of the platform provides room for toolboxes to carry miscellaneous items that are necessary in the operation of the vehicle.

The drop deck trailer is only 32 inches off the ground. This gives us a maximum in operator convenience.

The tractor that we're powering this unit with has 549 cubic inches, is gas powered, and has all the driver conveniences except air-conditioning. We have power steering, air brakes, piggy back air supply, adjustable ride control seats and twin screw axle.

Figure 5.—*Newest and largest Maryland test unit.*

The gear ratio is selected to give 58 to 60 miles an hour at 3400 rpms. I will also give you some axle weights in case they're of interest to you in your home State.

Our steering axle is 8940 pounds and the rear axle is 34,060 pounds. The units mounted on the back are the totemaster, utilized in moving the weights once they are on the ground, and the hoist, utilized in getting the weights to ground. They are both powered by 12 horsepower air-cooled engines.

We carry a spare tire, miscellaneous weights, and a small generator. The generator is used to power maintenance tools. It's capable of putting out 115 and 230 volts. When I say maintenance tools, I mean tools to maintain the piece of equipment itself. It will also pull a lightweight welder.

Figure 6 shows that the test weights are loaded five across. We also have a carrier containing 1,000 pounds of 50 pound weights. This carrier is adapted to the totemaster so that we can set it off on a platform or on the ground, drive over it with the totemaster, and take it any place we like.

We have one 500 pound weight that can be lifted off and handled by the high hoist and the totemaster by means of an additional hook.

The spreader bar on the tip of the hoist is adapted to pick up one, two or three weights. The tip is power controlled and will rotate 230 degrees.

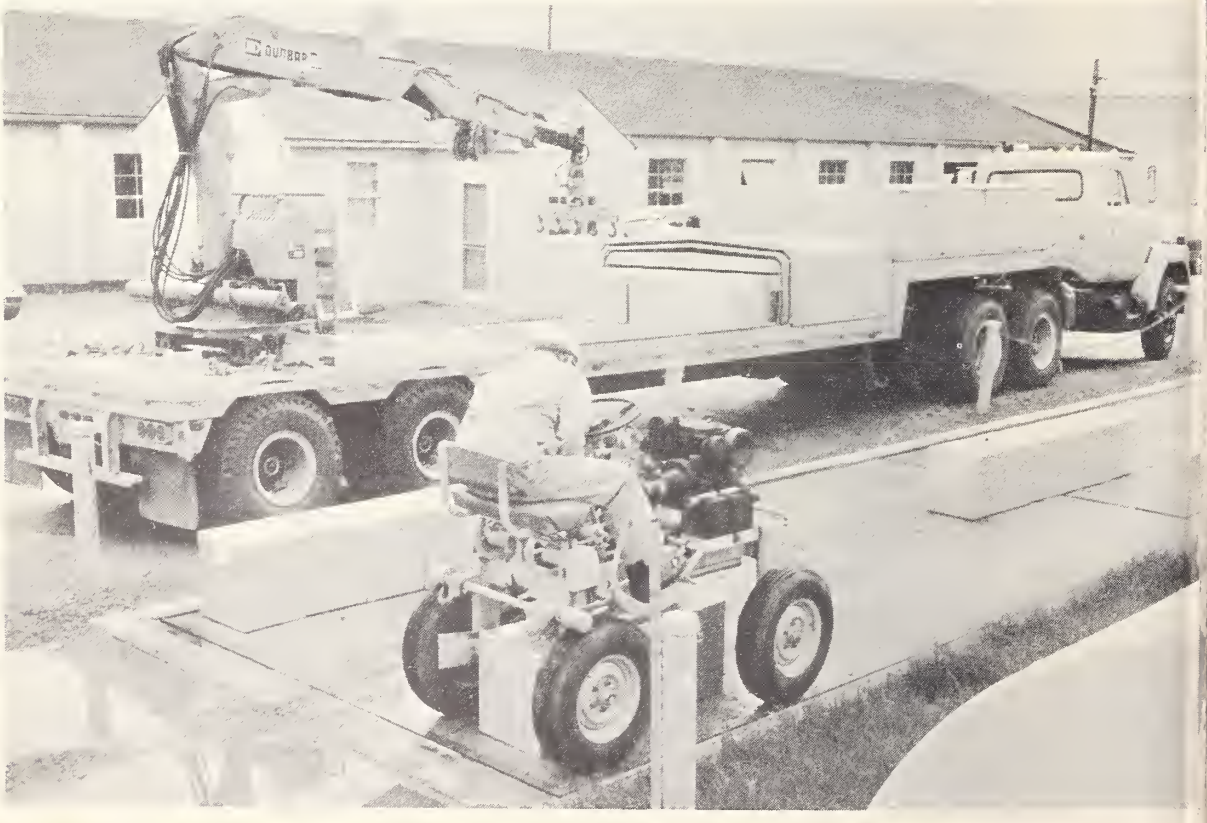

FIGURE 6.—*Totemaster moving three 1,000 pound test weights.*

The mechanical weight mover can be picked up by the spreader bar, lifted off the unit, and placed on the ground in any position at the rear of the trailer. This hoist will rotate 375 degrees.

The weight of the mechanical weight mover is approximately 1130 pounds.

When we pick up a load of weights, we can travel the length of the platform if we simply pull the weights back against the barricade. However, the moment we extend the boom, we have an inner lock on the track which prevents the hoist from moving. This is a safety feature. It will not move once the boom is extended.

DISCUSSION

Mr. Stewart: Do you have to park your unit beside the scale to unload the weights?

Mr. DeGrange: No, but it is more convenient. We like to pull alongside so that the operator, being on the right side, is able to see exactly where he is placing the weights. We can make a faster test that way.

You might be interested in knowing that we can run through the complete test in just about three hours. With two of us working on the unit, we can do three scales in a ten hour day unless we have considerable traveling between scales.

E. H. Black

Figure 7 shows the newest and largest Ventura County, California test unit.

This unit is used to check all types of large capacity scales in our County. The truck is an open type with a hydraulically operated extendable boom for loading, unloading and placing the test weights.

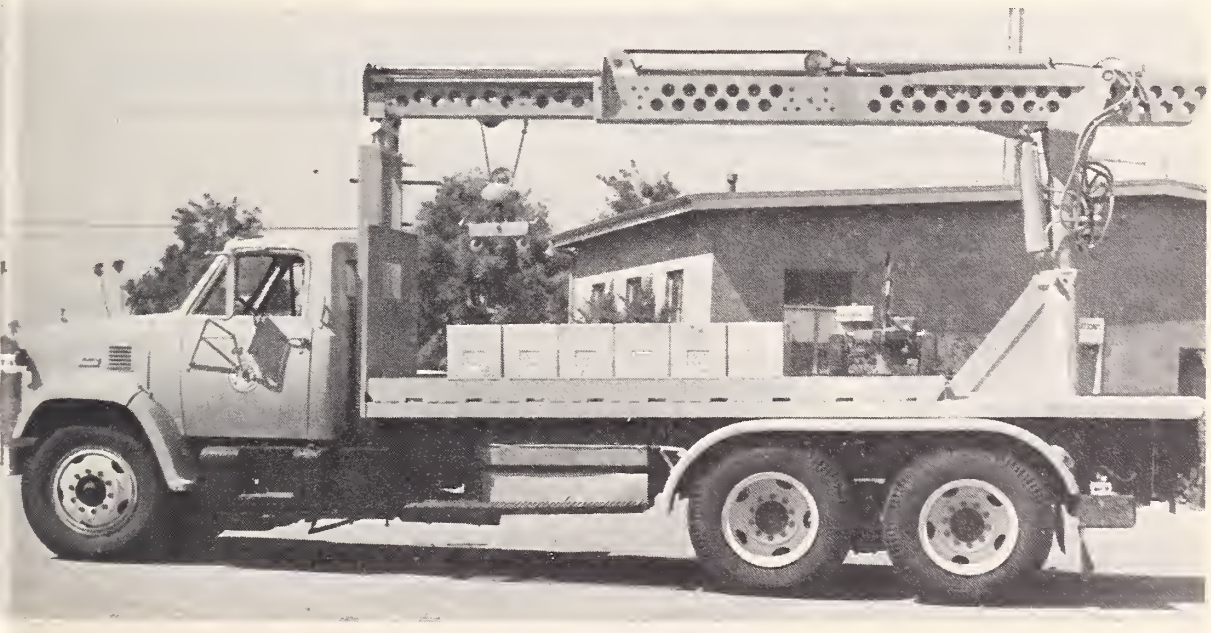

Figure 7.—*Newest and largest Ventura County, California test unit.*

The boom was manufactured by the Iowa Corporation of Waterloo, Iowa, at a cost of $11,287. The truck is a GMC Model JE 9500 with full air brakes, power steering, ride control seats and electric fuel gauges at a cost of $13,896.65. The truck body is large enough to accommodate additional test weights, when necessary, and was built at a cost of $2,760. The total cost of the unit was $27,943.65. The truck measures twenty-seven feet bumper to bumper and the total gross weight is 48,000 pounds. The front axle is 7,900 pounds net, and 14,850 pounds gross. The rear axle is 17,150 pounds net and 32,650 pounds gross. The total test load carried on the truck consists of twenty-four 1,000 pound weights and two metal baskets each containing 500 pounds of 25 pound weights. All surfaces of the truck bed are sloped and the weights sit on hardwood strips to facilitate cleaning and maintenance.

The boom of the truck (fig. 8) has a height of 12 feet, 4 inches, and extends to 25 feet. It has a rated lift capacity of 4,000 pounds fully extended. The boom elevates up to 60 degrees, rotates 400 degrees and retracts to less than one-half its extended length. The trolley carries the load the full length of the boom. Hydraulic outriggers are mounted at the rear of the truck frame to give added support.

Figure 9 shows a drawing of our 8 by 12 foot trailer that carries eight 1,000 pound and twenty-four 500 pound test weights for a total test load of 32,000 pounds. The trailer has a four foot wheelbase and is equipped with four hydraulic jacks that raise the entire load from four to six inches above the ground. When using the trailer to check a batch plant it is possible to raise the test load, hook to the batch scale and then lower the trailer, suspending the load. This trailer will also be used to check 10 foot highway scales.

FIGURE 8.—*Boom fully extended.*

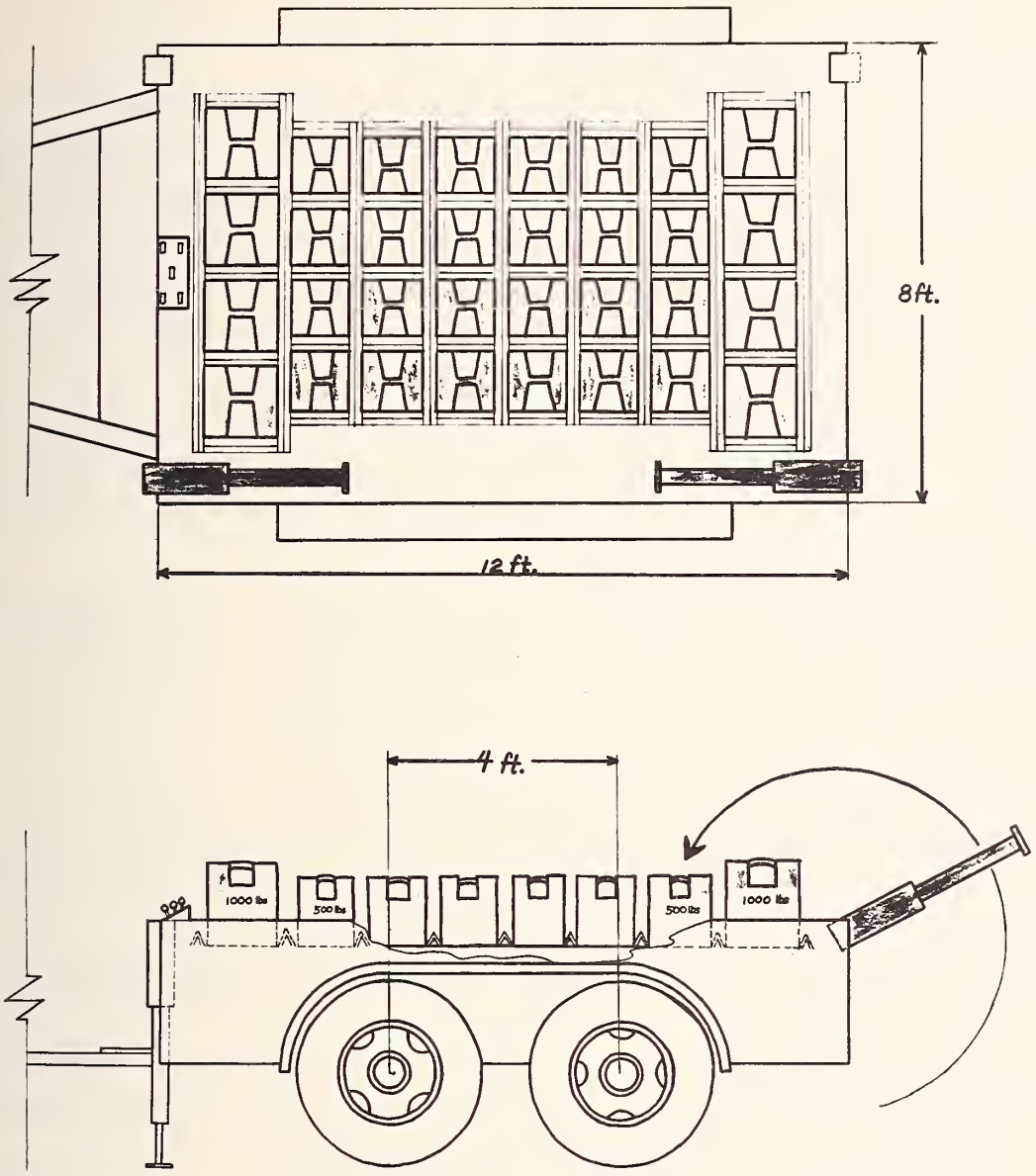

FIGURE 9.—*Drawing of trailer carrying 32,000 pounds of test load.*

MAINTENANCE, USE AND CALIBRATION OF LARGE TEST WEIGHTS

Harry Johnson, Office of Weights and Measures, will discuss with you the new Class F tolerance structure that has been developed by the Office of Weights and Measures for field test weights.

H. K. JOHNSON

Most of us have heard that a new NBS specification relating to a field standard weight category has been published: NBS Handbook 105, Section 1, "Specifications and Tolerances for Reference Standards and Field Standard Weights and Measures." 'Section 1' indicates that it pertains to field standard weights only, now called Class F weights.

If one was to examine the new code along with section 5 of the old 1920 NBS Circular 3, it is readily seen that the intention is to update the antiquated specification on Class C weights. The new Class F is intended to be adopted as a legal specification for testing of commercial weighing equipment.

Naturally it is anticipated that a period of transition must take place. It would be well for all officials to review and become knowledgeable about the specifics of both codes while this transition occurs.

One way to handle updating of the code is to work with the ASTM Committees and try to have our field standard specifications adopted as an appendix to their journal on test weight codes soon to be published.

We are discussing this with the ASTM. If our plans work out, changes could readily be made from year to year by asking laboratory technologists or weights and measures field supervisors to participate in ASTM Committee work.

The ASTM has a 32 volume book of standards which is re-edited and published annually. There appears to be no reason why such a private publication could not serve as a reference for legal test weight codes.

We should make some brief remarks about the new field standard tolerances found in NBS Handbook 105–1. The tabulation pertaining to avoirdupois weight tolerances can serve as a most practical reference for this purpose.

If we look at the table for Class F and visualize the older Class C table also, for comparison purposes, it is readily seen that tolerances for 2 pounds and below are more stringent for Class F. Tolerances for weights greater than 2 pounds denomination are reversed, however, and they have become less stringent for Class F.

The intention was to develop a ratio-type tolerance that would be practical for any field testing service, not be a real burden as far as the limits of present calibration equipment is concerned, and still meet the statement of general principle in H–44. This statement says that errors in such test equipment should not be greater than 25 percent of the smallest tolerance to be applied when the standard is used.

It is found, for avoirdupois denominations in multiple units and decimal fractions, and also for metric denominations, that a ratio of one part in 10,000 would easily meet all the requirements down to a certain level.

The new tolerance departs from this ratio for weights smaller than 2/10ths of a pound or 100 grams. It will be interesting to note from these remarks the "sealer's" tolerance on a 50 pound cast iron weight has jumped from 10 grains to a more liberal 35 grains. If it should be opened for adjustment, a supporting specification in the new code calls for half of that tolerance to be applied.

So much for the new weight code. As far as the care of such test weights is concerned, the fundamental guideline would be to look at the picture from the viewpoint of taking proper steps to keep the weights within these required tolerances.

Secondary, but still of importance, is the necessity for maintaining surface appearance in such a manner that the public will not question applying the term "standard" to such a device.

The small field standards should not present so much of a problem. One useful technique would be to instruct inspectors to complete their tests by using a soft, clean, wiping rag over each weight used during testing. If a small weight becomes dented or unduly scratched, it should be removed from the field test service. Such weights could be used secondarily for instructional purposes or as working standards in the lab.

The larger weights cannot be discarded as easily when damaged because of the cost factor involved. When a large test unit has been in continual service long enough for most of the weights to have developed a general run-down appearance, it would seem that coordination between the field and laboratory programs has broken down.

No one can say for certain at what periodic intervals the weights should be retested, unless there is a legal requirement in the jurisdiction.

Section 5 of the Model State Law indicates that field standards should be verified upon receipt and as often as deemed necessary thereafter.

Invariably, the question will arise as to whether large test weights should be completely reconditioned or merely cleaned and repainted. For either case, I would suggest at least half of the particular weight group be tolerance tested before the shop work is begun.

This initial testing should also help the laboratory technician to determine if shop work should include removal of the seals or other activity not associated with normal reconditioning. For complete reconditioning, paint remover seems to start off the job easier than by sanding, buffing or scraping. Of course, if your shop personnel have access to a sandblaster, that is easiest.

After applying one coat of metal primer, lightly sanding and applying two spray finish coats, the weight should have a neat looking surface which could easily last three years. This would, however, be dependent on how well the inspector handles the equipment.

Weight loading carts present special problems in use as standards. It is unlikely that one small nut or bolt missing would put these devices out of tolerance; however, the general accumulation of weight change due to maintenance changes coupled with the day-to-day wear

on such a device makes it necessary to have the cart tested more frequently than the weights.

Battery water and all sump levels should always be checked prior to any day of testing. Some designs make the old sump levels particularly critical because of the square inches of surface involved relating directly to the level line, that is, the line in the sight glass.

Verification of calibration of the test weights should be relatively simple with the highly refined balances and standards being installed under the New State Standards program.

Weights of three kilogram denomination or smaller can all be tolerance tested with direct reading devices. The three instruments involved all have built in weights which have assignment of high manufacturer's reliability, or they can be tested by the State metrologist to make sure that any errors are within the required limits needed for tolerance testing procedures.

In effect, the built-in combinations can become State reference working standards after they have been checked by the metrologist with the new primaries.

DISCUSSION

Mr. Smith: I think several things are obvious at this point about large capacity scale testing and test units.

There is no such thing as a model unit because too many factors are involved: geographical factors, scale capacities, the number and kinds of scales that you have in your jurisdiction, all of these things enter into the way you design a unit, and these units are pretty much custom designed for given areas. In addition, all test units are all being made larger and more versatile to enable you to do more with them.

One thing that weights and measures officials should always remember when testing any kind of a device—test the device as near as possible to the way it's being used. A device should not be expected to do something during a test that it's never going to be called on or expected to do in normal commercial use. However, we do want our equipment and our tests designed to bring out those things that do occur in normal commercial use.

OPEN FORUM ON MEASURING

S. Hasko, *Office of Weights and Measures Moderator*

This session will be concerned with problems in measurement. Subjects for consideration are:

1. Grain moisture meters.
2. Problems in LPG liquid metering—a panel discussion.
3. Checking odometers and taximeters.

In addition, any problems in the area of measurement may be brought up at the conclusion of this session for the subjects mentioned.

GRAIN MOISTURE METERS

The problem of grain moisture meters and the measurement of moisture in grain may be compared to that of an iceberg in the ocean in that only one-ninth of the problem is actually visible and thus appears to be deceptively simple.

Mr. Hunt of the Grain Division of the U.S. Department of Agriculture is with us today. He has been with USDA since 1937 and has been responsible for moisture investigation in grain since 1953. He has developed new methods for oven testing for grain moisture and has evaluated many moisture-measuring devices for possible use in official inspection under the U.S. Grain Standards Act.

Mr. Hunt will point out to you many problems present in the moisture measurement of grain.

RECOMMENDED PROCEDURE FOR STATE INSPECTION OF MOISTURE MEASURING DEVICES

W. H. Hunt

We are happy to have this opportunity to be with you to discuss the measurement of moisture in grain.

This is a subject in which we are most interested. It is a marketing matter of utmost importance. Some of our work in the Consumer and Marketing Service is in the area of marketing, the administration of food distribution programs, market reporting, and the measurement of the quality of foods and fiber.

Through all of our work in the Consumer and Marketing Service (C&MS), there is strong concern for the quality of the product. This is especially true in the marketing of grain where moisture content is an important factor affecting quality.

The U.S. Department of Agriculture has tested many moisture-measuring devices manufactured in this country and abroad for possible use in the inspection of grain. Unfortunately, there is no moisture-measuring device on the market today which can be depended upon to give accurate results *at all times*. Oven methods, or any method of device which gives equivalent results, are the methods prescribed for determining moisture in grain under the Official Grain Standards of the United States. Although the oven methods prescribed in the standards are empirical, they are designed to give results that are as close as possible to what is believed to be the true moisture content. That they do meet this requirement has been confirmed by comparison with results obtained by the Karl Fischer (chemical titration) method.

We welcome the increasing interest of the various States in checking the accuracy of the moisture measuring devices used in their respective States.

The Grain Division in C&MS is consulted by representatives of the various State governments on the problem of determining the accuracy of the moisture meters used in their States. The usual question is "Can we take a few samples of each of the grains having a known moisture content and travel around the State and check all the moisture meters?"

This procedure is impractical, not only because the sample may change in moisture value with repeated use, but also because the electrical properties of some samples will change drastically within 24 hours or less even when sealed in airtight containers. These electrical changes may continue in the same direction with time, or they may reverse direction. From our studies, it is estimated that the electrical properties of approximately 5 percent of the samples are in a constant state of flux.

We have further shown that extreme wet or dry conditions during the growing season may seriously affect the electrical response of the grain, and that different makes of moisture meters will respond differently to those changes. Electrical moisture meters measure certain electrical properties of the grain, and these measurements are then interpreted as moisture content through conversion charts. Therefore, abnormal electrical responses will result in erroneous moisture values. This is the major source of error in certain moisture meters that normally will agree closely with oven moisture results.

We recommend that the States, who have or are planning to have laws requiring that all moisture meters used in their respective States be checked for accuracy, establish a laboratory where all moisture-testing devices can be checked against basic oven methods. The oven methods that should be used are those prescribed by the Official Grain Standards of the United States.

A representative model of each type of moisture-measuring device used in the State should be compared with the oven results on at least 100 samples of each type of grain or other crop for which it is to be used. These samples should be representative of the total crop and have as wide a moisture range as possible. Only those meters having an average deviation within the established tolerance would be approved for use within the State.

When it is determined which makes and models of meters are potentially capable of measuring moisture content within the tolerance desired, the following procedures are suggested:

1. Obtain for use by the State agency responsible for the meter inspection one "standard" meter of each make and model that is considered acceptable and that is actually being used in the State.

2. Make sure that these "standard" instruments maintained by the State will give readings essentially identical with those of "master" instruments of the same makes and models that are usually maintained by the manufacturers or distributors. This can be accomplished only through an exchange of grain samples between the State and the firm or agency maintaining the "master" instruments. A few samples of each kind of grain will usually suffice for this purpose, and no knowledge of the actual moisture content of the samples is necessary. Checks of this kind should be made at rather frequent intervals.

3. Make certain that reliable conversion charts, tables, or scales for these meters have been provided, and that they are actually being used.

4. Perform the inspection of moisture meters throughout the State by checking the moisture content readings obtained by these meters against those obtained by the "standard" meters of the same makes and models maintained by the State agency. Here again a few samples of grain are sufficient, and no knowledge of the exact moisture content of the grain is necessary. Each "standard" meter must be used only for checking other meters of the same make and model. In each instance, comparative tests with the two meters should be on the same day.

The above-described plan, if properly put into effect, should make it possible to maintain within a State a reasonable degree of accuracy in electric grain moisture testing. It should provide a high degree of uniformity of results among meters of the same make and model. It should also provide for satisfactory *average* agreement among all approved makes and models of meters. The plan cannot be expected, however, to eliminate occasional fairly wide differences in results obtained among different makes or models of meters or occasional rather serious inaccuracies in results obtained by any one make or model of meter. All meters of one type may agree closely with each other, but still show very poor agreement with the oven moisture values.

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This method of maintaining grain moisture-testing uniformity, as well as a reasonable degree of accuracy, is essentially that used by the U.S. Department of Agriculture. A single make of capacitance-type moisture meter is used by licensed grain inspectors in the inspection of grain under the Official Grain Standards of the United States. By means of frequent exchanges of sample, the meters in grain supervision offices of the Department are kept in alinement with a "master" instrument maintained at Beltsville, Maryland. In a similar manner, the meters used by licensed inspectors at grain inspection points throughout the country are kept in alinement with the meters at their respective supervision offices. Thus, all of the meters are kept in alinement with the "master" machine at Beltsville. This phase of the program maintains good uniformity in moisture testing throughout the country but has little to do with insuring the accuracy of the moisture values obtained.

A final note of importance: In recent years, the use of pickershellers for harvesting corn has rapidly increased. The problem with the pickershellers, or similar equipment, is that they tend to cause mechanical damage to high-moisture corn which seriously affects the results obtained by electrical moisture meters. Further, mechanical damage greatly increases the rate of souring, and souring also adversely affects the results. For example, as corn increased in sourness from day to day when stored in sealed containers in our laboratory, the moisture meter readings rose sharply. At the end of a week, the apparent moisture content in some cases was as much as 10 to 12 percent higher than the original results on the freshly shelled corn. However, the oven moisture values showed that there was very little change in the actual moisture content with souring.

DISCUSSION

A Voice: Did I understand correctly that you would calibrate a meter in the lab using the USDA oven method?

Mr. Hunt: Yes.

A Voice: And then take this same meter out in the field and use that for checking other meters?

Mr. Hunt: That's right. I use one meter to check another type of meter.

A Voice: Well, that's the point I was coming to. Let's say we take a Steinlite or a Motomco. Would you use that against any other type of meter?

Mr. Hunt: No, for this reason: On a given sample the Motomco may have been giving the best average result, but on a given sample it might be a percent off. On a Steinlite you might get a perfect answer, but on the next sample it might be reversed.

A Voice: I think probably this would be a real good system, but I'm thinking about the investment costs buying these different types of meters.

Mr. Hunt: In most cases the companies are willing to give you a meter on consignment to use for checking other meters, because it is worth it to them to try and get a meter used within the State. What Maryland University did was to go down to the Eastern Shore and notify all the dealers that they would be there on a certain day. All meters were then brought to a central location and checked.

A Voice: Battelle Memorial Institute is, I understand, supposed to have completed their study on moisture meters. Have you received any results yet from them?

Mr. Hunt: Yes, and the results are negative at this point. They have not come up with a satisfactory meter.

A Voice: I believe you mentioned that you gave a tolerance of $\frac{3}{10}$ of a scale unit on the meter. What percent of moisture would this be?

Mr. Hunt: Three-tenths of a scale division is equivalent to six-hundredths of 1 percent moisture. The tolerance will vary with different grains, but most tolerances are around $\frac{2}{10}$ of a scale division. It is better to have a little greater tolerance at the upper and lower ends of the scale because any measurement is not as sensitive at the low and high ends of the scale.

A Voice: So actually you really cannot equate it to a moisture percentage of what the actual moisture in grain would be, or can you?

Mr. Hunt: You don't need to. One meter is checked against another. Take a sample that has a moisture content of 12 percent and that will not change in handling at normal conditions, preferably a hard wheat, but don't use grain sorghum. For some unexplained reason, grain sorghum does not behave well in meters. We prefer to use a hard wheat for calibrations.

A Voice: You mentioned that moisture content varied in a sealed sample.

Mr. Hunt: No, the moisture content did not vary. The electrical readings compared with them did.

A Voice: Does it always seem to get drier?

Mr. Hunt: No, the meter readings varied in either direction. I had one sample that on the first day agreed with the oven; the meter read 15 percent or somewhere in that range. The next day the meter read 14 percent, but the oven method still read 15 percent. At the end of 72 hours, the meter read 13 percent, but the oven method read 14 percent. At the end of a week the meter again agreed with the oven method.

A Voice: We are talking about meters. What about aggregate moisture meters? This is a big problem in California.

Mr. Hunt: I work entirely with grain. Actually, with sand or something in which you do not have bound water, you should have no problems in drying it out in an oven, because you have water of one composition. But with grain you have water in several different forms. You have a problem because, if you heat it too high, the starch in the grain breaks down. I would like to extend an open invitation to you. If you are going to set up a laboratory, we would appreciate it if you would come to Beltsville and talk it over with us and we will demonstrate to you our techniques and procedures. I think we can help you.

Mr. Hasko: Thank you, Mr. Hunt. We are completing a survey of the States concerning this problem. Thus far, we have received replies from 80 percent of the States. At the present time only three States have an active program in inspecting or testing. In eleven States, another State agency is actively working with the devices. In other words, fourteen States have some kind of testing program. Seventy percent of the replies we received indicated the definite need of such a program, and 61 percent of the replies indicated that weights and measures officials should have jurisdiction in such a program.

This is of vital concern to all of us since, in the replies that were received from thirty of the States, there are approximately 18,000 meters. The Office of Weights and Measures is embarking on a program to determine suitable methods, consistent with good weights and measures practices, for calibrating grain moisture meters.

PANEL DISCUSSION ON LPG LIQUID METERING

We will now move on to our next subject, which is the panel on Problems in LPG Liquid Metering. This panel will be composed of Emmett Wehmann, who is Assistant Chief Engineer for the Neptune Meter Company, Albert Komich of the Rockwell Manufacturing Company, and William S. Bigelow, Suburban Propane.

Mr. Hasko: Why is the meter pump bypass frequently restricted on LPG meters?

Mr. Bigelow: On meters themselves, very often what is used as the bypass is the safety bypass on a truck pump instead of a separate bypass going back into the storage tank. Assuming a bypass is properly designed for the pumping system, there should not be any particular restriction on it that will interfere with the proper operation of the system, but you will periodically run across some where there is a restriction or some pressure buildup beyond what you want.

A Voice: When returning the liquid from the prover to the tank, what causes an apparent failure in the pump-back with consequent frosting of the return line?

Mr. Bigelow: During the proving operation?

A Voice: Correct.

Mr. Wehmann: Is this a liquid pump pumping back into the storage tank?

A Voice: Yes, into the storage tank.

Mr. Komish: It sounds to me like some valve did not open properly.

Mr. Wehmann: It sounds like a throttled valve that was rapidly expanding the refrigerant as it flowed back through the hose. Is there any evidence that it took a long time to empty the prover?

A Voice: Yes.

Mr. Bigelow: Also, I think there is a possibility that there may not have been any pressure in the return line when the valve on the prover was snapped open. The return line on the prover has an excess flow valve on it that can act as an orifice. If you snap that valve open into an empty line, you will cause your excess flow valve to function. Your prover must be a code vessel because it is being transported over the road with a product in it. In order to meet the requirements and construction code of the vessel, it has to have the excess flow valves. It must be constructed like any other LP Gas vessel.

A Voice: We had difficulty with our prover when we first started out, and it is standard for all these vessels to have an excess flow valve. What we found out in our original testing is that, if the liquid return pump is turned on suddenly, the excess flow valve may snap closed. Then, from that moment, you are starving the pump and you are getting this refrigeration action. In our particular case, we decided that most of the time the prover is empty and is never transported with any liquid product in it, so we removed the excess flow valve.

In any test you want to keep the show on the road. You want to have all your ambient conditions uniform, and you do not want to have to waste a lot of time with interruptions, so we removed the valve.

Mr. Bigelow: This is fine if there is no State law with regard to LP Gas, but, if you try to move in the State of New Jersey or a great many other States without the excess flow valve, you are not going to move it very far whether it is a State-owned vessel or not.

Mr. Hasko: I feel that the removal of the excess flow valve makes your prover an exceedingly dangerous test device. If a break should develop in your hoses or plumbing when the prover is full or partially full of liquid, you may have no way in which to stop the flow. The excess flow valves are there for this purpose and should not be removed.

A Voice: If the excess flow valve is causing the problem, there is a simple way to correct the situation—close the valve and start over again.

Mr. Bigelow: If you close the valve and let it sit for a few minutes, you will hear the valve snap when it reaches its equilibrium. Then, by slowly opening the valve, you can proceed with the operation under normal conditions.

Mr. Hasko: Do you have any suggestions for improving the LP gas prover?

Mr. Bigelow: Yes, I have many. The first one is aimed primarily at the manufacturer of the prover. It seems to me that we could save an awful lot of wasted time by going to a reasonable capacity pumping system on the portable provers. Most provers that I have seen have a pumping system that will handle about 10 gallons a minute on the return of the product from the prover to the supply tank. When you run a prover, this means you sit around for 10 or 12 minutes while the prover is emptied. Going to a slightly larger pumping system, which will get you up to 20 or 25 or 30 gallons a minute, will speed this operation up considerably.

Mr. Hasko: The new provers do have a larger capacity pump with a pumping rate in this range.

Mr. Bigelow: With the advent of the 100-gallon prover and the 12-inch neck, the matter of leveling this prover becomes more and more critical. When the first provers were made, you were dealing with a 6-inch neck and the prover did not have to be completely level. Now you get into a 12-inch neck and very fine readings. If your prover is off level a little bit, you are getting into trouble. Some provers I have looked at have leveling devices on the bed of the trailer. I think they need readily accessible leveling jacks, carefully operated, on the larger provers.

Mr. Hasko: Why is it that a meter in otherwise "perfect condition" may overregister on a slow-flow test?

Mr. Komich: It depends on where you are creating your slow-flow condition. If you are creating your slow-flow condition downstream of your meter, throttling at that point, you are keeping your meter system pressurized and should not have a problem. But if you are doing it upstream of the meter, you have a valve close to its seat and you are creating a differential there that causes some vaporization. These meters all are mechanically operating a register or device above the stuffing box to the point where they have to be pushed, and there is no flywheel effect or anything else to keep the register going.

If it says overregistration, it would mean that register had to be pushed, like pushing a vehicle up a hill manually. It is only going to go up as far as you push it. Something must have made that meter turn to show this overregistration, and it would have to be liquid or liquid and vapor. Since you did not have the liquid in the prover, then it had to be vapor; and if it was vapor, it had to come from some place, and this is what I suspect happened.

Mr. Wehmann: I would like to go back. At one time we compared the various methods of testing LP Gas, and we had the choice between gravimetric and volumetric methods. The method presented in Handbook 99 is the best compromise from a practical weights and measures

standpoint. Like every compromise, there are some conditions in testing in the field that have to be recognized. We had to recognize that, in testing an LP Gas meter, we used an equalizing line from the prover, and at the same time we told the consumer or the user of the meter that, if possible, he not use the equalizing line. When you throttle a meter down to get the so-called "slow flow" or low-flow test, your pressures may actually go up in the system. As a result of throttling the prover valve, you are getting quite a drop in pressure at that point. You may very well be getting vaporization in the prover, and this vapor passes over through the equalizer line, causing overregistration of the meter.

The question is—what can you do about it? There are only two things to do from a technical standpoint. They are both concerned with dropping the pressure in the system so that you do not get this throttling effect once you run the low flow. You can either run the engine on the truck at its idling speed and have the engine stall, or have someone crawl around and try and do something to the pump bypass so that you do not get this high bypass pressure. At the moment, neither of these seems to be a nice practical weights and measures field procedure. To be quite honest with you, this appears to be the reason for the meter registration climbing, and believe me, if this is it, it has nothing to do with the meter. It is one of the idiosyncrasies of testing a product that has this tendency to flash into vapor due to quick changes in pressure.

Mr. Hasko: I would think that, if any appreciable vaporization were taking place, this would be reflected in a pressure differential between the prover and the tank.

Mr. Siebold (Liquid Control Corporation): Couldn't you throttle for slow flow by throttling the equalizing line?

Mr. Wehmann: You could throttle it to the point where you get the result you were looking for in the sight gage, but someone might accuse you of trying to make the test come out right or cover up for some meter deficiency. If you throttle it too much, you get condensation in the prover and a false reading in the other direction.

Mr. Hasko: What is the nominal service life, gallonwise, of a meter before servicing, other than gear changes?

Mr. Bigelow: This can be anywhere up and down the line, and most of it has very little to do with the meter. It depends upon the product. You have to go back to the source. If you are testing a product with a high sulphur source, forget it; you are going to replace measuring chambers frequently. If you get a product that has come out of a salt well, in many cases you will get some very fine sand or something similar that will get carried over through a pipeline. This will also create problems.

Mr. Wehmann: We go from the extreme that Mr. Bigelow is talking about where we might have product problems, or we go to

the closed-loop technique. This is where you run the same product through a filter all the time, and then the meter life is tremendous—hundreds of thousands of gallons. You could use this in advertising and sell more meters. But really, I think, from the user's standpoint, a meter ought to be examined and calibrated at least once a year. It is a lot more economical to repair the meter at a time when it is perhaps least needed in service, rather than wait for something to go wrong. Most of the people in the industry are practical enough to realize that, as a meter wears, it tends to give away the product, and this is not smart business. Thus, during a period of off-use, an examination of the meter will indicate repairs that are apparent, such as clearances or what have you, that should be taken care of. From the weights and measures standpoint, I would certainly feel that once-a-year calibration is in order.

Mr. Bigelow: One additional thought on this, concerning our own meters. Where they have been regularly checked in service, essentially on an annual proving basis, we will encounter minor changes in adjustment or minor "change gear" changes either every year or every other year. Where we find a substantial change coming up in the meter adjustment or in the change gears, this tells us right then that this is a meter that has to be taken apart and serviced. You will not run across a major change unless you have some internal problem in the meter.

Mr. S. D. Andrews: I represent the State of Florida, and we are about to embark on a meter-testing program and have had several hearings. Several questions were raised when we indicated our program would be based on Handbook 44. The first was that zero-set-back interlocks were not generally available for motor-fuel devices. Is this correct?

Mr. Wehmann: I know of a company that makes a propane motor-fuel dispenser equipped with an interlock.

Mr. Andrews: Their contention was that it would be a severe imposition at this time to require this, and that they are not generally available.

Mr. M. Greenspan (New York City): I recently introduced a request to add a provision in Handbook 44 for an interlock on vehicle-tank meters, and in order to supplement my request I had to do a little research. There are five patents now available. Of the five, three prototypes have been made and are being used in the field today. None of the three are set up for extensive production, but the moment demand exists, I am sure they can be produced. One of the devices will be going into production within a few months on a regular basis.

Mr. Andrews: I would like then to ask the officials who are here now, "Are you enforcing this provision?"

Mr. Bigelow: On service-station dispensers there are units available; essentially they are the same—an island with a tank and every-

thing else on it, and a comparable housing to a gasoline pump meter housing. And this, to the best of my knowledge, is being enforced. This is fully interlocked for a service-station operation.

Mr. Andrews: Not on vehicle types?

Mr. Bigelow: No, this is on service stations.

Mr. Andrews: As I understand it, the requirement in H–44 is limited to motor-fuel dispensers?

Mr. Bigelow. That is right, and there are devices available. In fact, it is much cheaper to put a conventional meter out there and hang a hose on it than to put in a dispensing unit with an interlock; but the interlock is available and is used.

A Voice: I was wondering whether, when you speak about a zero-setback-interlock, you are referring to a motor-fuel dispenser, or are you talking about a dispensing device for filling, say, with bottled gas?

Mr. Andrews: We are talking about motor-fuel dispensers, and not other retail devices. One other question that arose at the meeting was a rather strong resistance to being limited to pumping within the maximum discharge rate of the meters. Most of the companies there claim that they had to exceed this in order to meet the demands of their customers in the peak season.

Mr. Wehmann: From the meter standpoint, we can sympathize with the user, but if he has to go higher, the product is a difficult product to measure. You want to hold it within reasonable limits over a reasonable period of time for inspection purposes. The general rule that has been followed has been that the meters should not be operated above the maximum recommended by the manufacturer. This is what I think the industry basically holds to. Some people perhaps do not undersand completely what is involved here, but, as far as the meter is concerned, generally nothing surprising will happen when you exceed its maximum recommended rate by some amount for a short period of time. In other words, accuracy does not just go to pot the minute you hit that line. But if someone is going to make it routine for some part of a season to speed or race a meter, then one runs into problems. Our general recommendation is that a meter should not be put in sustained service where it is going to be overspeeded.

Mr. Stabler: That is covered in H–44 under "Suitability of Equipment."

Mr. Wehmann: If I recall correctly, and this is going back a number of years, when the Bureau first started working with a liquid-meter prover, we brought a tank truck down to be tested. All kinds of pumping tests were run on the tank truck at the Bureau. Those were charted out very carefully and within the design rating of the meter. We had a very consistent figure. Assume it is a 60-gallon meter. When you get out to 70 gallons, you are not too far off in accuracy; but the further out you go, the further off it runs, on both sides, rather con-

sistently. It seems to me, whether it be Florida or anywhere else, this is a bad general practice.

Mr. Komich: The biggest effect comes in the longevity of the meter used. If you run it consistently at close to 100 percent, and over 100, to 110 or 120 percent, you are cutting off the useful life of that meter pretty fast.

Mr. Andrews: I heard someone say that, as long as it did not involve the safety of handling the product, he had no objection whatsoever to pumping at twice the speed. I would say, why would we object to it since it seems to indicate that it actually resulted in underregistration, which would be to the customer's benefit, if the manufacturer wanted to speed up the delivery. Well, I did not have any answer to it.

Mr. Hasko: As Mr. Wehmann has stated, it can overregister as well as underregister when you exceed the rated capacity. I think we have had a great group here on this panel, and I think we have obtained a lot of valuable information.

CHECKING ODOMETERS AND TAXIMETERS

Many weights and measures officials, particularly those in urban areas, are interested in simulator type methods for checking taximeters and rental vehicle odometers. We feel that we have developed the nucleus for a reliable system which will be explained by Jim Little of our Engineering Staff.

J. W. Little

I wish to present a system for checking odometers and taximeters. This system was designed to accurately and rapidly test and retest vehicle odometers. The objectives included ease of operation, minimum equipment costs, minimum test time, safety, and accuracy. We feel these goals have been achieved. Two approaches to testing odometers are available. First, a road test using a fifth wheel or surveyed distance posts. The second is a simulation system. One commercial "roller" device has been found inaccurate with certain types of tires. The approach used in this procedure is to find the rolling circumference of the tire in one operation and the number of turns of the rear wheels per mile on the odometer in the second operation. The product of the two is the test distance.

We made a test of this principle, confirming the validity of the approach. Numerous experiments were conducted on a two-mile measured course to find out what happens when different types of tires are used. We used 2-ply, 4-ply, 6-ply, snow, radial-belted, and bias-belted tires to determine their characteristics at different test speeds. Turn counters were attached to both rear wheel hubs and the turns for two miles

recorded at several test speeds. The results confirmed the rolling circumference determined on the parking lot.

All tests were made using the same tire pressure. Tire pressure increases as you drive, and we found this to be a factor in the two-mile experiments. Since the two-mile test area was about five miles from the National Bureau of Standards site, the tires were stabilized and needed only to be adjusted to the test pressure. Correct tire pressure is an important factor in the test.

In the two-mile tests, we found that belted tires (both radial and bias) were nearly insensitive to speed, whereas 2-ply, 4-ply, and 6-ply snow tires were sensitive to speed. At speeds of 25 miles an hour, the differences were approximately 10 feet per mile, and at 45 miles an hour the differences were 35 feet per mile. In all cases, the tire requires fewer turns per mile at the test speed. Therefore, an odometer test of a vehicle equipped with conventional construction tires will require a correction dependent on the test speed. Ordinarily, a vehicle odometer is tested at 45 miles per hour, and taximeters at speeds of about 25 miles per hour.

We used a statistical plan to find the optimum number of wheel turns in the rolling circumference test. At the same time, we evaluated the performance of three operators and several types of tires. Analysis of this data indicated (at 90 percent confidence limit) no detected difference between operator, tire type, vehicle, or number of turns in the rolling circumference test. What this means is that a long parking lot, close to 160 feet, for a ten-turn test is not necessary. Three turns (a distance of approximately 60 feet) is all that is required for a rolling circumference test. The rolling circumference test is as follows:

Step 1. Position the vehicle at the starting line.

Step 2. Mark the rear tires at the point where they are in perpendicular contact with the road.

Step 3. Place a measurement bar on the roadway next to the mark on the tire.

Step 4. Place the test load in the vehicle.

Step 5. Adjust the tire pressure.

Step 6. Drive vehicle slowly while observer walks alongside counting three turns of the rear wheel.

Step 7. Measure distance traveled by both right and left rear wheels.

From this test we have a good indication of the average circumference of the rear tires. Figure A outlines this part of the test. These seven steps are the first half of the calibration. This test requires a relatively small length of parking lot or garage. It is done rapidly and recorded on the test report. We found that paper self-adhesive stickers on the tires marked with felt marking pens avoid the problem of chalk marks on tires.

3 TURNS TEST

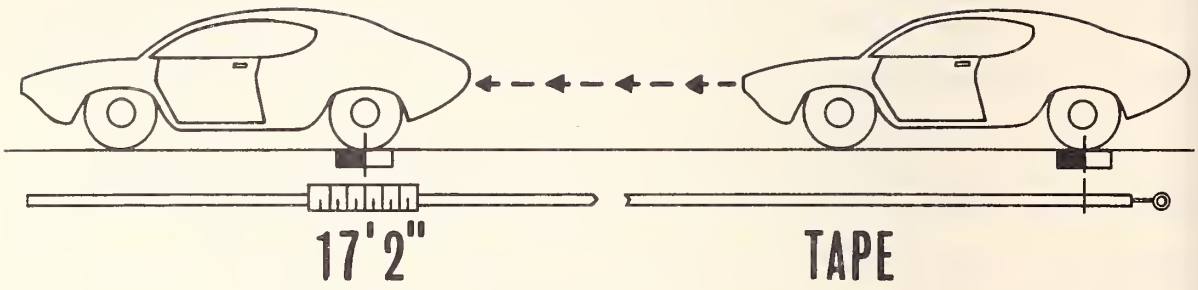

FIGURE A

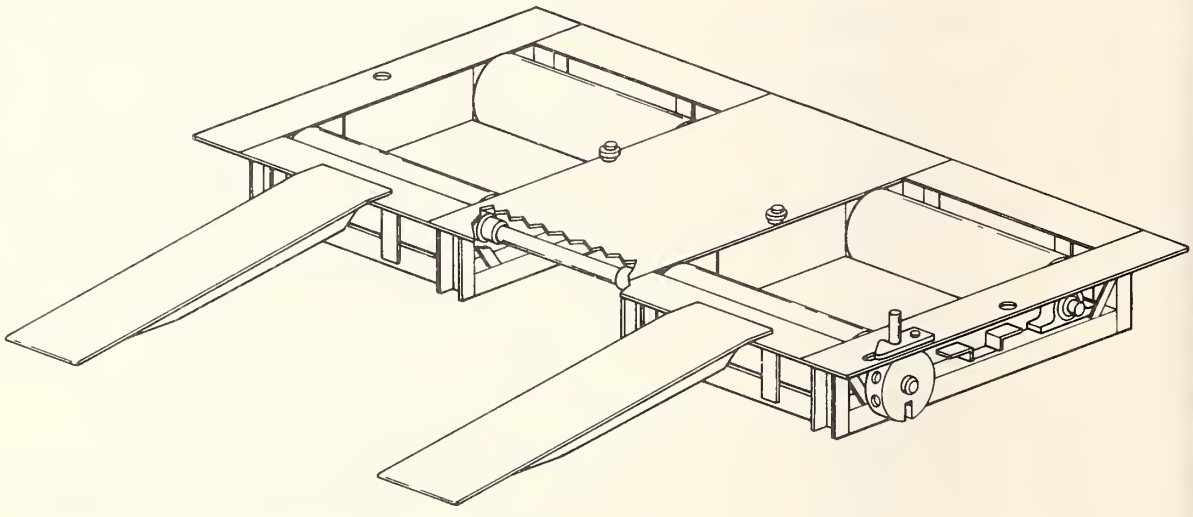

FIGURE B

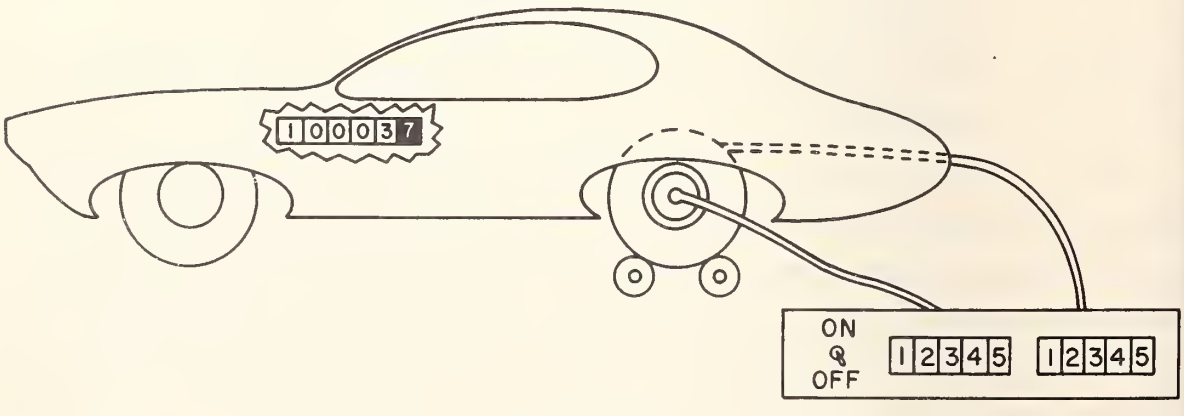

FIGURE C

Average distance per turn 6 feet

Turns per 2 miles 1,700

Turns X distance = uncorrected 2 miles

2 miles = 10,560 feet

1,700
x 6
10,200
+70 correction for 45mph
10,270
- 10,560
- 290 feet

tolerance ±396 feet

FIGURE D

We also found two factors which had some effect on the test. If the wind velocity was greater than 30 miles an hour, or if the grade in the test area was greater than about 3 percent, a difference in our results between up and down wind runs, or up and down hill runs, was evident. Finding a level test lot should present no great problem. Testing in a garage with at least 60 feet of test space should present no problems.

The second part of the test was run on a simulator base shown in figure B. Since the front rollers are connected by a shaft, both rear wheels rotate approximately the same number of turns. Each rear wheel has an electrical contact which makes one pulse per revolution. These pulses are recorded on two counters which are put on the seat next to the driver, as shown in figure C. A switch starts and stops the counts. We record left rear wheel turns and right rear wheel turns on the data sheet, average the count, and run the test twice, to be certain of the results. At the end, we have a very useful piece of information. We have measured the number of turns of the rear wheels to indicate two odometer miles. Once this number is determined, unless some mechanical change is made in the vehicle transmission or rear axle, it will be fixed for that vehicle.

In our test, we do not count revolutions of the simulator drum. The only purpose of the simulator drum is to permit rotation of the vehicle wheels at approximately the same speed and to run the test distance on the vehicle odometer with a minimum of fuss and bother. An interesting feature of this test is, once you have established the number of turns of the rear wheel for two vehicle miles, you can per-

form a spot check on the vehicle by performing only the three-turns test on a short section of roadway, parking lot, or wherever you happen to be, without repeating the two-mile run. You need six measurement blocks, a tape measure, and a test record of the vehicle. Figure D shows the calculations.

On a test form that we have designed, we have a procedure by which you can find the zero-error test distance—add and subtract the 3¾-percent test tolerance—and record these as tolerance limits. This means that you may go out and test or sample without redoing the whole test. An estimate of the time for this retest would be five minutes per vehicle.

Assume the owner wants to change to snow tires. Ordinarily, he would either be taking a chance of being in violation or have to retest his vehicle. With this system, he can perform the three-turns test and find out if his snow tires keep his vehicle within test tolerance. If they are, he is in no danger. If they are outside, he will have to change his transmission take-off gear. At that time, he would have to recalibrate the whole system. If the man takes ordinary care and replaces with the same size tire and if the vehicle is not at the extreme ends of the tolerance, the vehicle should still be found within tolerance. This gives the owner the opportunity to self-police his operation. He can make these changes with confidence. If his vehicles are then sampled at any time in the future, he will be in compliance.

DISCUSSION

A Voice: I got lost somewhere. Where did you get that plus 70 factor?

Mr. Little: That is a correction factor applied to the test when the vehicle is going 45 miles an hour with a conventional tire.

A Voice: You said that it is a correction for 45 miles an hour. How did you arrive at that?

Mr. Little: This was determined on a two-mile measured course. We ran vehicles in a series of speeds from 15 to 55 miles an hour to acquire data. You see, a tire rolling down the road is subjected to centrifugal force. This tends to stretch the tread of conventional tires and make it larger. Therefore, it requires fewer turns to go a distance at a speed of 45 miles per hour, for example, than it would at 2 to 4 miles per hour. The belted tires do not stretch, the belt is strong, and the cords go around the circumference of the tires, so that the tire just does not stretch. There is zero correction for a belted construction tire.

A Voice: In other words, this correction will be used for everything but a belted tire. What about radials?

Mr. Little: That is a belted tire. Any conventional tire will require this 35-foot correction at 45 miles an hour. You may question the

10 feet at 25 miles per hour. That sounds like a bit of triviality. But if you look at the taximeter code, it is 1 percent on overregistration and 4 percent on underregistration. Since 1 percent is about 50 feet, we cannot overlook this correction in the 25-mph test. The uncertainty at 45 mph is such that almost all of your tests will be within 0.5 percent of the road test. At 25 mph, it is about 0.2 percent. Thus, we feel that we are in good agreement with the tolerance requirements for testing both taximeters and odometers.

A Voice: Do you recommend this test over the fifth wheel?

Mr. Little: Take your choice. This simulator takes a different form of equipment; it does not take a roadway. With a fifth wheel you have to attach the wheel to the vehicle and find a long straight stretch of road free of traffic. It is a matter of judgment on your part, depending on what space you have available. This system is going to require equipment comparable to the cost of a fifth wheel.

A Voice: You have to have the rollers, the counters, the tape, and two men.

Mr. Hasko: The main value of this is for urban areas where you do not have the room for going out at 45 miles per hour; you can do this all in the garage. It can be done in inclement weather. It can be done when the snow is six feet deep. There are a lot of advantages. The fifth wheel, if you want to get down to specifics, is more accurate and is portable. It is not limited in use to one location. It may be used all over a State. Thus, each of them has its particular suitability of application.

A Voice: When will this examination procedure be published and available?

Mr. Stabler: Very soon.

A Voice: Should not each simulator carry its own correction factor?

Mr. Little: No. If you use the roller system as a simulator, it will be dependent on what kind of tire is rolling on it. The correction factor is influenced very strongly by the type of tire, the amount of tread on the tire, and the test speed.

Mr. Stabler: All we do here is rotate the tire the number of turns necessary for the test mileage. The rollers do not have any counters attached to them. The counters are attached to the rear wheels. Thus, the rollers are no more than just hardware for this test. Are there any other questions on this simulator type method?

A Voice: How about a cheaper tire as opposed to a more expensive tire which might be heavier?

Mr. Little: This is part of the reason for the test variability of ½ percent at 45 mph. There is a difference. All tires do not come out exactly 35 feet per mile. But the 35 feet per mile puts it close to every tire we have come across so far, including some very good ones, some very cheap ones, and snow tires. You see, new snow tires generally have thicker tread rubber than other types. The remarkable thing is

that no belted tire that we have come across has ever shown a change in number of turns per 2 miles due to speed. One thing I neglected to mention is that we are counting an integral number of turns. The counter displays whole numbers—no fractional turns.

MR. HASKO: Thank you very much, Jim.

GENERAL DISCUSSION ON MEASURING

MR. GREENSPAN: I don't know if this is a situation that is developing elsewhere, but in New York City, particularly with the problems of air pollution and the fact that too much of the bunker oil has a high sulphur content, many of the small plants and small business establishments are going from a No. 6 to a No. 4 oil. The people who are delivering No. 4 oil are basically using the vehicles that they were normally delivering No. 2 oil in, and most are equipped with meters rated at perhaps 80 gallons a minute. In delivering No. 6, they are not delivering 150 or 250 gallons; they are making a 500-gallon or 700-gallon drop. They want to speed up the turnabout. We understand that quite a number of them have taken the original pump in their vehicle and put in a much heavier pump, and in so doing we feel that, first of all, shock pressure is going to knock the heck out of the air eliminator in no time. It is going to do things to the entire metering system.

We have asked a number of the companies to give us specifications as to the rated capacities of their meters. We have gotten very fine responses from some companies, but not from others. Without knowing the specs on the meter itself, how can we control the situation?

MR. HASKO: Does anyone else have this same problem?

MR. GREENSPAN: I suspect that others have the problem, but they are not aware of it; and with the situation of air pollution developing throughout the country, you are going to have a large changeover from bunker to No. 4. If they do not have the problem now, there is a good possibility it may develop. Handbook 44 states that the system shall be as designed by the manufacturer; but unless the manufacturers will come across with the specs, we have no way of really checking up on it.

A VOICE: Well, how about proving the meter?

MR. GREENSPAN: When you are doing the proving, you are running at your rated speed. In other words, you have an 80-gallon-a-minute meter and you do not know what is under that truck, so you feel it is about 80 gallons a minute. But when these fellows are taking it out and using it, they know what it is. They will race the motor and take the governors off, or they have a bigger pump and they are pushing at higher speeds.

A VOICE: I have found that, when running at a higher rated speed, they are going to give away product.

Mr. Greenspan: For a time they will; but eventually what happens is that they knock the devil out of the air eliminator; which then operates to the detriment of the customer.

Mr. Hasko: Mr. Gallo, when you conduct a test, do you normally ask the operator to pump that oil at the rate that he normally pumps it when he is making a delivery?

Mr. F. P. Gallo (Ohio): He will tell you that is the rate he delivers his product at, but how do you know when he is delivering that he is not setting his throttle much higher or disconnecting the governor? You do not know. And he is not going to tell you if he is aware of this.

Mr. Wehmann: Well, why not prove this meter at the highest speed available? You get in there and throttle it yourself. You can easily find out whether the governor has been disconnected or not.

Mr. Hasko: I do not think that is a good idea to get in there and start operating that equipment.

Mr. Gallo: That is right; and if you do this on a truck that is operating correctly and you knock out his air eliminator and collapse the float, who is going to pay for the repair?

Mr. Komich: The best thing is to catch him going over the capacity rate of the metering system.

Mr. Greenspan: If you have the spec on the pump capacities and on the meter capacities, by visual examination you can determine that he has installed a different pump of a higher capacity immediately.

Mr. Hasko: If he exceeds the rated capacity of his metering system, then he will in all probability damage his air eliminator. This you can determine with a split-compartment test.

A Voice: How can you check an air eliminator if the truck has a single compartment?

Mr. Hasko: He has to have another truck, or he has to get rid of his product.

A Voice: You must have the product out of that truck so you can check the air eliminator.

Mr. Gallo: I have a question on meters concerning the printed ticket. Trucks come in and buy diesel fuel. They will pick up 75 to 100 gallons and insert the ticket in the slot. It will be punched, and a lever that goes through the ticket indicates that it has been used. The ticket indicates the amount of gallons delivered, which I guess should agree with the amount on the indicator. And then the prices on the chart; they put in the price and they use this chart, a separate chart which is handled by the attendant, to put in the total amount. What is your feeling about a ticket of that type?

Mr. Hasko: I believe the code permits you to put the price down if your recorder does not.

A Voice: The only thing is the paragraph dealing with possible fraud. I could not find anything else.

363-611 O—69——6

Mr. Stabler: That would qualify as a wholesale device. When you get beyond that 50 gallons, it is a wholesale device. Maybe they can write it down in longhand. Your home deliveries of fuel oil, for example, can be written in longhand.

A Voice: Well, this is a service station on the road—anywhere from 10 to 100 gallons at a time. We were not quite sure how to handle this kind of thing.

Mr. Hasko: I think that is covered under the LMD Code in UR.3.3. "Any printed ticket issued by a device of the computing type on which there is printed the total computed price, the total volume of the delivery, or the price per gallon, shall have shown thereon also the other two values (either printed or in clear handscript)."

A Voice: Well, it will print the gallons received; and then you have to tell him the rest, the price . . .

Question: Mr. Chairman, talking about the interlock on meters, Handbook 44 just limits gas pumps on interlocks, but it does not cover meters on trucks which deliver fuel to homes. Is that correct?

Answer: That is correct.

Question: Has the Office of Weights and Measures done anything about it?

Mr. Greenspan: If you read your program on the report of the S & T Committee, that is one of the things that I have introduced for this session. It is being held over for further study.

Questioner: Fine. We are having trouble in that area.

A Voice: Along these same lines, I think consideration ought to be given to gasoline-pump dispensers with the face fastened with a key or some kind of mechanism. Today all you have to do is pull out the face cover with a very slight pull and a man can reach up and take his finger and set that price any place he wants to when he is finished. It is just as easy to beat a customer that way as it is to fool with the interlock. If the face were locked, it would be much harder to do this; you would have to break the glass to do it.

A Voice: Are you talking about a regular gasoline dispenser?

A Voice: Yes sir.

A Voice: Well, they are supposed to be covered with glass.

A Voice: They are covered, but the covers that the glass is set into are just fastened in with a clamp spring, and many of these springs are gone; they are just hanging there. You can just pull them out, reach your finger up, and push the wheel.

A Voice: I would be inclined to hang a red tag on the pump and forget about it.

A Voice: And close them down?

A Voice: I sure would. I would close them down. If it is as easy as you describe, just a matter of flipping the face and pushing the number, that would facilitate fraud.

A Voice: It sure would.

A Voice: We had a very big station that got new pumps, a very reputable company, with interlocks. After about a month, the interlocks on all of those pumps went bad. They flew in a new design and modified linkage from the interlock, and within 24 hours it was repaired.

A Voice: You have to have a law to back you up on that, but there is nothing that says how a pump faceplate has to be fastened on.

A Voice: No, but the facilitation of fraud in General Code in G–S.2 covers many sins, and you can use that. That is as much a part of the law as a spec is.

Question: Back to the point we just discussed. This came up in Washington a couple of years ago. As I recall, and I could be wrong here, we had correspondence at that time with Mac Jensen, and he informed us that, if the pump face was properly covered and required a manual effort to lift the glass, the burden of proof would then have to be on the inspector to catch him at it.

A Voice: That is the reply we had.

Mr. Hasko: Thank you for your participation in this session.

OPEN FORUM ON MERCHANDISING

O. K. Warnlof, *Office of Weights and Measures, Moderator*

From the suggestions received, we have selected the following topics for discussion today:

1. The retail sale of beef by hanging weight.
2. Produce labeling—count versus weight versus measure in the sale of produce.
3. The effect of the Repeal of the Standard Container Acts of 1916 and 1928 on weights and measures enforcement.

RETAIL SALE OF BEEF BY HANGING WEIGHT

O. K. Warnlof

The retail sale of beef by hanging weight has received considerable attention over the last several years. Some contend it is a weights and measures problem. Some say it is not. We hope after this presentation to have an open discussion during which we may develop answers to the following questions:

1. Is it a weights and measures problem?

2. Can a complaint concerning this method of sale be satisfactorily investigated?
3. Can weights and measures enforcement be effective under the existing Model Law and Model Regulation or under those laws and regulations in your State?
4. If not, what additional laws or regulations are necessary?

There is no doubt that the sale of meat has a significant economic effect on most consumers in the U.S. The possibility of saving money on purchases of meat is an inviting proposition for most of us. The following information from the Federal Register of April 3, 1969, indicates that the Federal Trade Commission was concerned with several aspects of this method of merchandising.

Part I. It is ordered, That respondents, Consumers Food, Inc., a corporation, and its officers, and George Sharkey individually and as an officer of said corporation, and respondents' agents, representatives, and employees, directly or through any corporate or other device, in connection with the advertising, offering for sale, sale, or distribution of freezers, freezer food plans, food, or other products, in commerce, as "commerce" is defined in the Federal Trade Commission Act, do forthwith cease and desist from:

1. Representing, directly or by implication, through the use of terms such as "Anniversary Sale Special" or in any other manner, that any price is a special or reduced price unless such price constitutes a significant reduction from the price at which such merchandise has been sold in substantial quantities or offered for sale in good faith for a reasonably substantial period of time, by respondents in the recent, regular course of their business.

2. Falsely representing, in any manner, that savings are available to purchasers or prospective purchasers of respondents' merchandise, or misrepresenting, in any manner, the amount of savings available to purchasers or prospective purchasers of respondents' merchandise at retail.

3. Representing, directly or by implication, in any manner, that the price per pound of meat is a net weight price when in fact the price per pound of meat is based on the weight of the meat before trimming.

4. Failing to clearly and conspicuously disclose, in the body of any advertisement for meat that is to be sold by gross weight, the average percentage of weight loss that results from trimming.

5. Representing, directly or by implication, that purchasers of respondents' freezer food plan can buy their usual food requirements and a freezer for the same or lesser amount of money than they have been paying for said food requirements alone.

Better business bureaus in the United States have made an effort to prevent the use of "bait and switch" techniques in the advertising and

merchandising of many products, including hanging beef. Bait and switch, although not a weights and measures consideration, further confuses consumers when making purchases.

In all other sales of commodities, there is some way to ascertain the accuracy of the transaction, to verify the results, or to satisfactorily investigate a complaint. For example, you can always checkweigh random or standard packages. In a personal service retail meat store you can make purchases. If the complaint concerns the sale of motor fuel, you can examine and test the pump, or you can make purchases if you are so equipped. In the sale of livestock or grain, you can make purchases or sales and test or examine the device used. With the merchandising method that we are discussing here, it is extremely difficult, if not impossible, to make any determination. Why? Because the meat is sold by hanging weight, which most ads indicate, but in print so small it is difficult to find.

"Hanging weight" means that the meat is weighed and sold in one large piece, and cut and delivered in a number of smaller pieces, excluding certain parts like fat and bone. And because each animal varies in proportion of meat, fat, and bone, it is impossible to reconstruct these portions and establish whether or not all the meat, in its proper proportion of steak to ground beef, was delivered to the purchaser. The following illustrations are the result of several cutting tests in which we participated with a large chain store. We selected two sides (four quarters), i.e., two hinds and two fronts. We attempted to select one side that is generally used in freezer meat operations and one generally used by supermarket operations. (See figs. 1 through 4.)

The result of these tests and information from other sources indicate that the cutting loss varies with (1) the weight of the carcass, (2) the grade of the carcass, (3) the method of cut, and (4) the degree of trim. Now, how can a weights and measures inspector or consumer determine the accuracy of the transaction when buying meat in this fashion? I am sure there are many consumers today that think when they buy a 350-pound side or a 60-pound beef bundle they will receive that many pounds of meat, or very close to it. Some weights and measures jurisdictions have taken action. For example, a recent news article states:

> Beef firm fined $15,680.00. The Blank Beef Company of Springfield, Mass., Incorporated, doing business as Blank Beef, was fined a total of $15,680 for violations of truth-in-lending and correct weight laws in District Court on Thursday.

Some jurisdictions have passed regulations in addition to the Model Regulation to deal with this problem. Is there any weights and measures official here that has investigated this method of sale of meat and would comment on it?

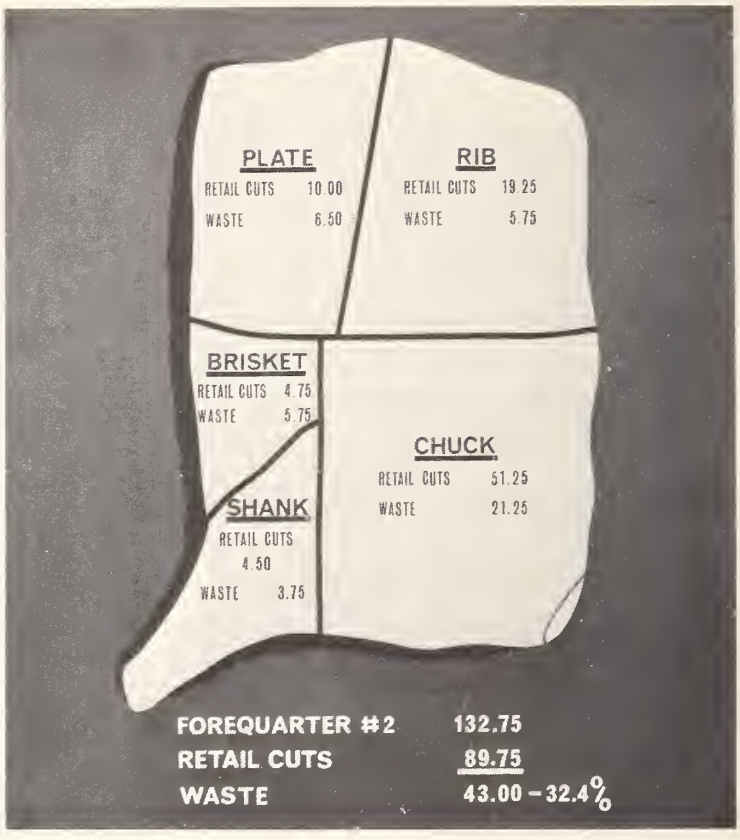

FIGURE 1

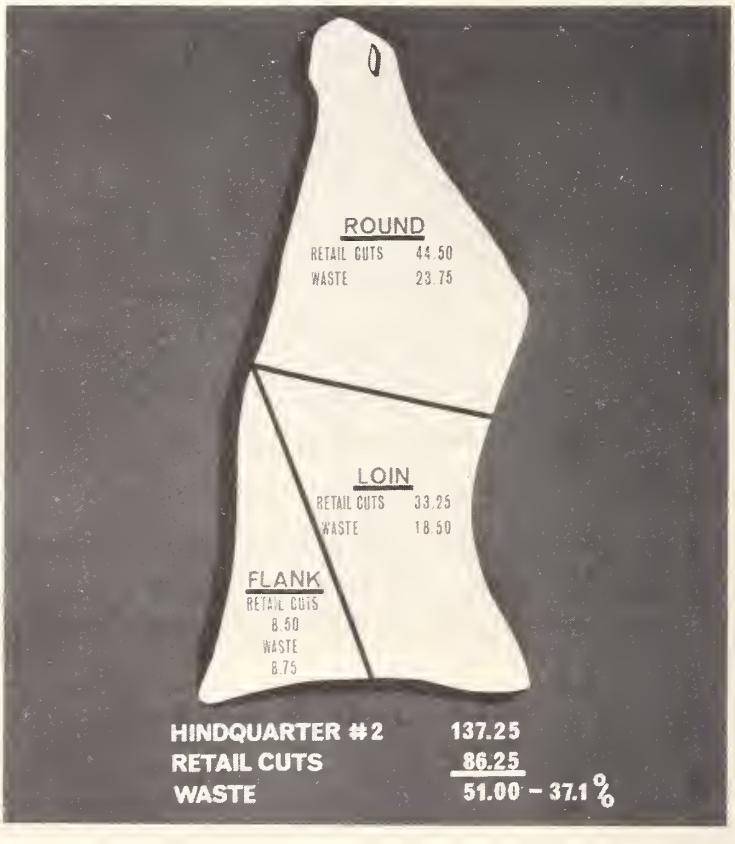

FIGURE 2

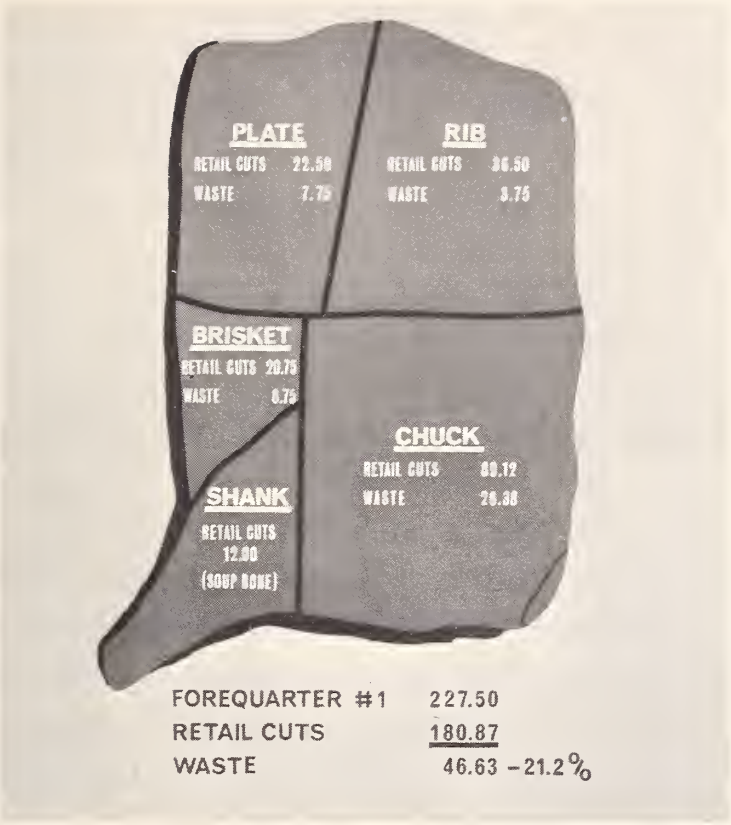

FIGURE 3

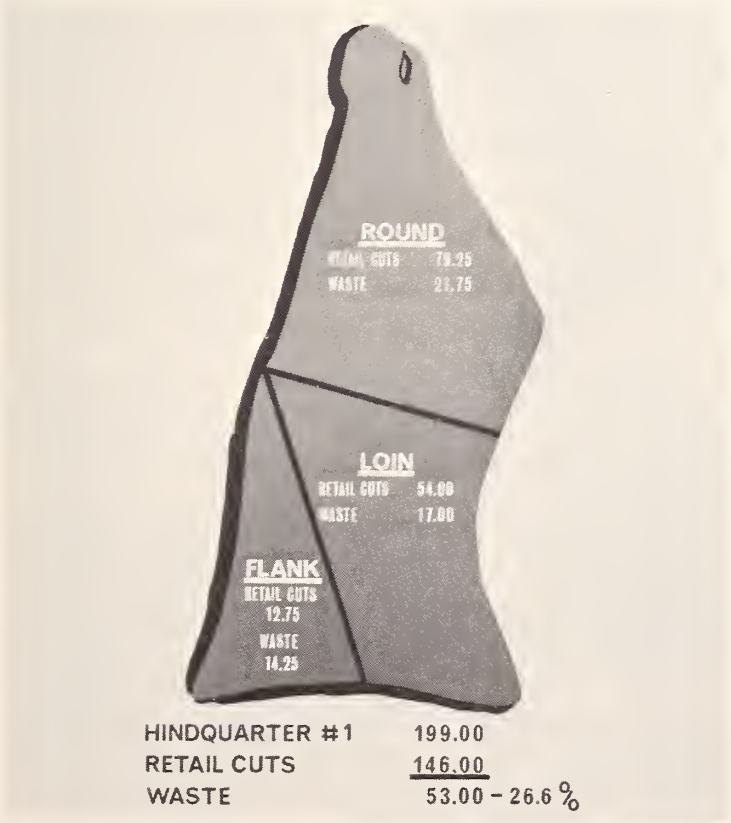

FIGURE 4

Mr. R. W. Horger (Santa Clara County, Calif.): We have had considerable activity in this area with both local companies and those with national distribution. With the help of the District Attorney's office, we have been somewhat successful in our efforts. We have found that it is difficult to get a conviction merely on short weight. By working with our District Attorney, we were able to get a conviction for false advertising or some other offense.

For example, in investigating certain complaints, we purchased a side of beef and found that it did not have any ribs. The U.S. Department of Agriculture furnished us with a meat grader, who testified that not all the parts of the side were included and these parts were from more than one side of beef. When it was delivered to us, it had the seal from three different slaughterhouses. In this case, we were able to get a conviction against this particular seller. But this did not stop them. Two weeks later they were operating under a different name and started advertising and selling again. We had so many problems that we went to the Legislature in California and asked them to give us some help. A law was passed to help support us. It is now required, if they advertise by hanging weight, to present at the time of delivery a sales slip that indicates not only the hanging weight which was the basis of purchase, but the number of pounds net weight delivered. We tried to include a requirement for the number of pounds of each cut, but a compromise was made which required the number and kind of each cut—for instance, six T-bone steaks, two porterhouse steaks, and so on. This aids us at the time of delivery; and if some of the parts do turn out to be missing, an expert should be there to testify.

We also went to a slaughterhouse, and with their cooperation we watched and kept records on a cut-up of a standard grade, a good grade, a choice grade, and a prime. We found that, with the higher grades, there is more loss. Some of the sides of beef advertised as "choice" at 39 cents a pound were extra fatty. Then, to make it less desirable, it was cut for display at an angle to make the fat look even thicker. They then try to sell you the higher priced beef. This is, of course, what "bait and switch" means.

In this instance we cannot get a conviction with our law, but by working with people who have jurisdiction over "bait and switch" and false advertising, we are able to convict. This is where we have to make up our minds. Are we going to involve ourselves just with the technicalities of weight, or are we going to be involved with protecting the consumer and work with other agencies as well?

Mr. W. C. Hughes (Massachusetts): I would like to address myself to the clarification of that $16,000 fine mentioned by Mr. Warnlof. I

am well acquainted with it. As a matter of fact, I made the reference to the Attorney General's Office. The fine, as far as weights and measures was concerned, amounted to $100—$50 for selling meat *other than by weight* and, believe it or not, if you want a real ambiguity, the next fine, also $50, for *short weight.* Therefore, the first charge was for selling other than by weight, and the second charge was for giving short weight. The remainder of the fine was in relation to a law which provides for "truth-in-lending." It was for usury that the big fines resulted, plus a fine for false advertising. A cease-and-desist order was issued on a number of these operators, which virtually drove them out of the Commonwealth of Massachusetts, because it required them to not only advertise gross weight, but to also state the total yield.

Mr. Warnlof: Mr. Hughes, do you think that this is a weights and measures problem?

Mr. Hughes: Yes, I think it is a weights and measures problem, but I think that weights and measures has to go further into the consumer effort, and I think they have to work with others. I came to this conclusion while serving on the Massachusetts Governor's Consumer Council. This meat problem can be corrected, but we will need additional legislation.

Mr. J. A. Kriney (Somerset County, N.J.): I have had a lot of experience in this area. In fact, I have put two or three of them out of business. In my county people were selling by hanging weight and advertising 32 percent to 34 percent loss. Our regulations state that, when the meat is cut up, it has to be put into packages and each package marked as to weight. Also, the trimmings and the waste have to be put into a container and the purchaser can either accept or reject the trimmings, so that at any time we can take all packages and weigh them. They are also compelled to mark on the container the weight and a list of the types of cuts. I have had 13 violations so far. In one violation, there were 76 packages and 13 different types of cuts. A former senator, who was also a lawyer, had the case turned over to him, and he prosecuted the case. The man appeared, pleaded guilty, and paid his fine.

We had another seller that sold a package deal with a freezer for $900. With carrying charges, the cost was $1,300. The actual value of the freezer was listed at $300. That was another one that we prosecuted. In other investigations, we found that the actual cost of the meat that was advertised at 69 cents a pound was $1.25 to $1.35 a pound, depending on the yield. We also found in one particular incident that meat purchased at a regular market was about $18.75 cheaper than an identical amount bought by hanging weight.

Also included in my department is the License Division. If some meat market is out of line, one way of dealing with the situation is to bring them before the License Committee and have their license suspended.

Mr. M. Jennings (Tennessee) : In Tennessee they advertise a half a split hog, average 20 pounds. A half a split hog is one-fourth of a hog, because if it is split it is a half, and one-half of a half is a fourth. If it is 20 pounds, it is not even big enough to be called a hog; it is a pig. With the cooperation of the newspapers, who refused to accept this type of advertising, our situation was corrected. Through our Weights and Measures Department, the Food and Drug Division within the Department of Agriculture, and through the Slaughter House Act, we are getting excellent results prosecuting these operations for various other violations.

Mr. D. I. Offner (St. Louis, Mo.) : In the coolers of some operators, you will find that there are already a series of packages of steaks and other cuts. The animals have long since been slaughtered, trimmed out, and cut, and yet the man is advertising as if it is hanging weight. Quite obviously any order is going to be made up necessarily of packages of beef from parts of various animals, and this is fairly common practice.

Mr. R. W. Richards (Pennsylvania) : The USDA Packers and Stockyards Division and other agencies conducted hearings on this problem in three or four different cities a few years ago. Testimony disclosed that the cutting loss in establishments such as this was not 25 percent or 35 percent, but almost always 50 percent or more.

We saw an example of it in Pennsylvania. The Department of Agriculture made an inspection in one of these establishments in Middletown as a result of a complaint. They found a model meat shop with the latest equipment. However, as the inspector went through the meat room, he happened to look into one of the waste barrels and saw an entire steak loin of about 40 pounds. The inspector called the manager over and asked, "What is this doing here?" The manager displayed concern and called for the meat cutters. Nobody knew how it got there. We know how it got there. While the unsuspecting purchasers were over in the corner wrapping their packages, their attention was diverted, and in the waste barrel went the loin.

Mr. J. M. Chohamin (Middlesex County, N.J.) : I went through this investigation that Mr. Kriney pointed out earlier. However, there is another point we have to consider, and that is substitution. The firm that Mr. Kriney was referring to has a small brochure which does not even refer to a side of beef. It is a combination package. Some operators solicit by phone, and then send a salesman out to interested parties. His job is to confuse the housewife and find out how much she is paying for food, so that he can work in his program. If she says $30 a week, he works out a program for $30. After he establishes a weekly average expenditure, he says to the prospect, "You don't want soup meat; maybe you would like more steaks." He informs her that when you make a substitution you get equal value. What she does not realize

is that, if she takes out short ribs or soup meat, she is going to get something of equal dollar value. In other words, if she is entitled to 10 pounds of shin meat and she agrees to substitute sirloin steak, she might end up with only one or two pounds.

This is a weight problem that I think has to be considered. In this respect, the State of New Jersey has Interim Ruling No. 2, which regulates the method of sale of this type, as was pointed out earlier.

Mr. Warnlof: Thank you very much. I would like to recap, if I may. I think that most agree that this method of merchandising is a problem. One problem is that the consumer does not receive enough information. It also appears there is a need for additional weights and measures regulation. Some States have, as previously stated, passed regulations requiring the net weight of the delivered cuts and the number and kind of the various cuts.

The sale of beef or steak bundles—that is, portions that do not include an entire primal cut—can be regulated under the "Sale of Meat" section of the Model Law and the labeling requirements of the Model Packaging Regulation. It should be required that each package be labeled as similar packages in a supermarket display are labeled and be advertised accordingly. In the sale of individual whole primal cuts, quarters, and sides, it seems that additional regulation is necessary.

A report of this meeting with a recommendation for additional regulation will be made to the L & R Committee of the Conference.

PRODUCE LABELING

The next subject today involves the method of sale of fresh fruits and vegetables. Leading this discussion will be Dave Edgerly.

D. E. Edgerly

Nonuniformity in the sale of fresh fruits and vegetables has brought about many problems to industry in having to deal with nonuniform labeling requirements among the States, and to weights and measures officials in the interest of uniform laws and regulations. We feel the point has been reached where something must be done. In the past month or so I have been attempting to make myself as much an expert as possible on the subject. I have found that I know very little about the merchandising of fruits and vegetables. This is a tremendously large area, and it is a rapidly expanding market. So I have asked two experts to be with us today to present their views.

DEVELOPMENT AND USE OF UNITED STATES GRADE STANDARDS FOR FRESH FRUITS AND VEGETABLES

Our first speaker, Mr. F. W. Betz of the U.S. Department of Agriculture is here today to shed some light in the area of weight versus count in terms of the method of sale of fruits and vegetables. Many States have attempted to solve the problem by stipulating that count may be used in lieu of weight when certain things, such as the grade of the particular product, are stated. We felt that there were many who did not understand USDA grades and that Mr. Betz could help us in this area.

F. W. Betz

It is my pleasure to join with you today in a discussion on the merchandising of fresh fruits and vegetables and the part U.S. Grade Standards play in our marketing system.

Grade standards developed by the U.S. Department of Agriculture serve as a basis for measuring the quality of fresh fruits and vegetables, nuts, and special products. Standardization specialists from C&MS's, Fruit and Vegetable Division work closely with the fresh fruit and vegetable industry to develop standards for grades. They revise standards to keep up with changes in marketing practices and consumer preferences, and they establish new standards to fill new needs.

Development or revision of a grade standard is usually initiated when there is an apparent need for a standard or for revising an existing one. These standards provide the industry with a common trading language for selling and buying. In response to industry needs grade standards have been issued over the past 52 years. Currently 153 grade standards are in effect for 83 different fresh fruits, vegetables, nuts and special products. Most of these apply to the product as it is intended to be sold on the wholesale market. Others are "Raw Products for Processing," a basis for contracts between grower and processor. Thirteen of the standards are for "consumer" grades, primarily intended for use by prepackagers, but seldom used.

Although most of the grade standards were designed for use in wholesale transactions from the producer to the retail buyer, they can be used to reflect the quality of commodities in retail channels.

The standards carefully describe the quality requirements for a distinct grade of a commodity. The highest grade represents the quality that is desired most by the trade. Lower grades reflect quality levels less desirable but which are merchantable under normal market demands. These standards are developed with the cooperation of the industry and every effort is made to have them reflect good commercial

practice with full recognition of the needs of growers, processors, sellers, buyers and consumers.

Use of U.S. grade standards is voluntary except in special situations where they are or may be made mandatory such as: (1) Under the Export Apple and Pear Act; (2) Export Grape & Plum Act; (3) Federal or State Marketing Agreements and Orders; and, (4) State laws. The official grade of a product may be certified under voluntary Federal or Federal-State Inspection Service, which is available nationwide to growers, processors, shippers, receivers and other financially interested parties on a fee-for-service basis.

Inspection is available either on a lot basis or on a continuous inspection basis. Continuous inspection is a special type of service which is made available to packers at shipping point and in terminal markets. This service is designed to aid packers who pack in consumer size containers, but it may be used with any size container.

Products packed under the continuous inspection program in compliance with an inspection contract may be labeled with official USDA marks. These marks include the Department's shield with the legend, "Packed Under Continuous Inspection of the U.S. Department of Agriculture" and the appropriate U.S. grade designation. These marks give assurance that the commodity was prepared and packed under sanitary conditions and meets the grade as marked on the container.

Fresh fruits and vegetables, rice, dry peas, dry beans, honey and maple syrup are the only major food products for which official grading is not required before U.S. grade terms may legally be used. Official grading is a prerequisite for the use of U.S. grade terms on processed fruits and vegetables, meats, eggs, poultry, grain, dairy products, and other agricultural products. These differences came about because of variations in long-established trade usages, legislative provisions, regulations, and standards.

Inspection certificates issued describe the quality and condition of a product, and such certificates are prima-facie evidence in Federal courts and in action under the Perishable Agricultural Commodities Act. This Act is designed to encourage fair trading practices in the marketing of fresh or frozen fruits and vegetables in interstate or foreign commerce.

The U.S. Department of Agriculture's Consumer and Marketing Service develops U.S. grade standards for many food products in addition to fruits and vegetables and makes grading and inspection services available to the industry.

The U.S. grade standards and USDA inspection are complementary parts of the services available to the industry through the Consumer and Marketing Service. They help to take some of the risk out of marketing and aid in reducing waste and extra costs. These services help

bring the consumer the product he wants, efficiently, quickly and economically.

DISCUSSION

A Voice: I was surprised to hear that potatoes and several other items, although they might carry U.S. No. 1 designations, have not been inspected and graded by an official of the USDA.

Mr. Betz: This is correct; but it is the obligation of the packer to make sure that they grade them properly. We have some misbranding laws under the Perishable Agricultural Commodities Act which state that, if a seller's product in the market or in the process of marketing does not meet the grade as labeled, he can be prosecuted.

A Voice: Would you name those items that are not required to have official certification if the seller uses a grade label on the package.

Mr. Betz: All fresh fruits and vegetables. Rice, dry peas, dry beans, maple syrup, and honey are the major commodities that can also be labeled as to grade, but they do not require official grading or certification by the USDA.

Mr. J. F. Lyles (Virginia): I understand that you have certain tolerances where potatoes labeled No. 1 need only be 90 percent No. 1.

Mr. Betz: No, but there is a recognition of up to 6 percent for defectives.

Mr. Lyles: Can a sale of 85 percent No. 1 be made?

Mr. Betz: Yes, if it is represented as only 85 percent or whatever the percent may be.

PROBLEMS IN MERCHANDISING PACKAGED FRESH PRODUCE

For industry's view on this problem, I would like to introduce Mr. J. S. Raybourn of the Produce Packaging and Marketing Association in Newark, Delaware.

J. S. Raybourn

My remarks this afternoon will deal principally with some of the problems encountered in the merchandising and the methods of sale of packaged fresh produce as opposed to produce which is sold at the retail level in bulk. I do not mean to imply that there are no merchandising problems with bulk produce; but since the passage of the Fair Packaging and Labeling Act, it seems that many more problems arise concerning the consumer's ability to make value comparisons, or concerning the adequacy of the quantity declarations on packages of produce.

Produce packaging is not really a new industry. Biblical stories reveal the use of goat skins as protection for fruits and vegetables being moved from one place to another, however, very little is recorded about produce packaging prior to 1850. Before this time, packaging was not a real necessity or problem because most communities were more or less self-sufficient and there was very little movement of produce over long distances. But beginning in the 1850's and continuing for almost one hundred years quite a number of experiments and trials of different methods and systems of packaging were undertaken. However, it wasn't until after World War II that produce packaging as we think of it today really got started in earnest. And it was twenty years after this start, in 1965, when the sale of packaged produce became the predominant method for the sale of produce throughout the country.

From the thumbnail sketch of produce packaging I have presented, you will realize that weights and measures laws have been on the books much longer than we have been packaging produce in any great quantity, and most of these laws were written before the "state of the art" of packaging was developed to the point at which it is now. This generates some of the problems being encountered in the merchandising of packaged produce today. Many of the State laws and regulations enacted in the 30's, 40's, and 50's are still in effect, and in some cases these laws were not written to take into consideration the tremendous growth and expansion of packaged produce into interstate commerce.

We know that a great deal of effort has gone into revising and updating these laws, and you gentlemen are to be commended for these advances. We believe, however, that additional work is needed, primarily in the uniformity of State regulations, and hope that meetings of this nature will provide the necessary guidance and impetus to achieve uniformity.

To briefly explain why the produce industry is concerned with the uniformity of State laws, I will point out that today produce is packaged in three general areas. It is packaged at the retail level, in the backrooms of the retail outlets; at the distribution level, either by a terminal packager or in a chainstore central warehouse; and it is packaged in the production area. The packaging trend, because of the economics involved, is to get the produce packaged before it reaches the stores. This means that more and more produce is being packaged and then shipped in interstate commerce.

An apple grower in the State of Washington may grow and package all of his apples in the State of Washington, but his apples may be shipped to all 50 States for sale. You can imagine the problems he and others in the industry face when some States require apples to be sold by weight only, some States permit weight or count sales, and merchandisers in thousands of retail outlets want the flexibility to sell in either or both ways. Then to add to the packager's dilemma, 15 States require the grade of the apples to be declared on the package,

14 States require the variety, 14 require the size or minimum size, 7 States require the Controlled Atmosphere Registration number, and one State requires the minimum quantity on the package.

These variations in requirements of the various States pose some real problems for the packager since he must determine the quantities of packaging material he must stock, what sizes of different packages he must use, what printing on the stock will satisfy the most requirements—and keep him out of trouble, the optimum quantity to place in each package to maximize sales potentials and meet the demands of consumers, and of course he must consider the increased cost of changing over his packaging lines from one container to another, or one size to another to meet the various requirements.

About now you might ask, "Why not sell everything in bulk? Why bother with packaging if there are so many problems?" And I can tell you that a lot of produce is sold in bulk. But the produce department of any supermarket must pay its own way just like any other department in the store, and in order to do this the produce department is going to have to follow the self-service trend of the other departments, and this means packaging. Even if the markets could find, train, and keep qualified personnel in their produce departments, the cost of these services would have to be passed on to the consumer, and these costs are higher than the costs of packaging.

It is also an established fact that packaging affords greater protection for agricultural products, reduces the losses, decreases the shrinkage and increases the shelf life of the products, thereby providing a better product at a lower cost to the consumer.

As far as I know, there isn't a single organization in the food industry which isn't trying to make a profit, and packaging is one of the methods used to make this profit. So I feel I am pretty safe in saying that packaged produce is here to stay.

There are, of course, many other problems which must be faced in the merchandising of produce in addition to those of the producer-packager which I have mentioned. Some of the major problems which occur are brought about by nature, over which we have very little control. Agricultural products are not comparable to an automobile production line where each product can be turned out exactly like the one before it and the one after it. Even though great strides have been made in this direction we still cannot guarantee from one year to another, or even within one growing season that we will have uniform sizes or shapes, uniform quality, or sufficient quantity of any commodity. So we need the flexibility to be able to change our methods of sale to take these unpredictable features into account. It would be great if we could tray-overwrap four red delicious apples and they would always weigh two pounds; or bag 12 oranges and know that they would be uniform in size and weigh five pounds—but we just can't guarantee

this. What we can do is increase our emphasis on, and our ability to improve sizing and grading to the point where we can be sure that we have 12 uniform sized oranges in a bag so the consumer will be able to make a value comparison of the product from the count information available on the package. I might add that progress is being made in the fields of sizing and grading. Cabbage, which has traditionally been sold by weight because of the variations in head sizes is now being accurately sized in some production areas, and markets are now able to sell this commodity by the unit. It becomes a better bargain for the consumer because the cost of weighing each head has been eliminated.

We hear talk that everything should be sold by weight to make value comparisons easier. But this is not always true. One pound of thick skinned, heavy citrus does not have the same nutritional or economic value as a thin skinned variety weighing one pound. A pound of celery, or corn, or cauliflower, or escarole which has been properly trimmed and prepared, and the unusable parts left in the production area or in the back room of the store certainly has more value than a pound of the same commodity with the outer leaves or husks, or butts left on.

In addition, weighing, and labeling the package with this weight information adds cost to the product. A good automatic scale and labeler costs in the vicinity of $4,000, and this cost must eventually wind up on the consumer's bill. To many of the small, seasonal businessmen in the produce industry, the cost of this type of equipment is prohibitive.

While I do not think that the sale-by-weight-only method is the solution to all our problems, neither do I want to leave the impression that the sale by weight of produce should be eliminated. This method has been, and probably will continue to be the principal method for produce sales. What I am saying is that we need the flexibility to change from this method when circumstances dictate a change, and we need this flexibility in all the 50 States.

Some of the newer and more progressive methods of merchandising produce are going to raise more questions and pose additional problems for you people in Weights and Measures. More and more "service" is being put into packages, and the value of this service is difficult to measure in terms of price per pound, or price per package. I refer to partially prepared foods such as sliced tomatoes, peeled potatoes, or orange sections in a package. We also find merchandisers who are not satisfied to put just one commodity in a package and who are using the "combination pack" to move more produce. Some of these merchandising methods which have become quite popular are the "tossed salad combination" with 5 or 6 different commodities in the package; the "vegetable dinner" containing from 4 to 8 different commodities; or the "two for one combination" with two peaches and two pears, or any number of commodity combinations; or the fruit basket with a large variety of fruit. Then, of course, there is the "premium package."

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For example: four to six premium, uniform, washed and foil-wrapped baking potatoes in a package. At the present time this package cannot be sold in Pennsylvania unless it weighs 3, 5, or 10 pounds, because their law states potatoes can only be sold in these quantities.

I have very briefly touched on just a few of the problems of packaged produce merchandising, and only one or two trends in merchandising methods that may before long require some of our methods of sale rules to be changed. I hope you have gotten the idea that you can't stand still in the area of laws and regulations which govern the marketing of produce.

As I said earlier, we know that you are taking steps to up-date and revise your weights and measures regulations, and we hope you are moving toward uniform measures in all of the States which will certainly help to alleviate many of our problems. I know that I can pledge the support of our Association to any activity which will help make the marketing of fresh fruits and vegetables more orderly and effective.

DISCUSSION

Mr. Edgerly. There are several points that should be concluded from this session. First, we must realize that the area of prepackaging fresh fruits and vegetables is relatively new. Because of the many special problems in this area, there is a need for further study of new labeling methods that would provide adequate information to the consumer. This is your job and our job. In this respect, we have discussed with several industry members, as well as with weights and measures officials, the possibility of a committee that would be chaired by a member of industry. The committee membership would be comprised of representatives of industry, weights and measures officials, and OWM. It would discuss possible solutions to the confusion that currently exists in methods of sale of fresh fruits and vegetables. This is what we wanted to point toward in this discussion today. The need is there. We realize the challenge, and we intend to do something about the confusion.

REPEAL OF THE STANDARD CONTAINER ACTS OF 1916 AND 1928

Mr. Edgerly will also discuss the final subject today, which involves the status of weights and measures laws, regulations, and enforcement with the repeal of the Standard Container Acts of 1916 and 1928.

Nobody really thought about the Standard Container Acts until they were repealed, and now everyone is concerned as to the exact impact of their repeal. The effect of the repeal is that there is no impact whatsoever at the State level unless there are laws and regulations existing at the State level that were passed in parallelity with the Federal requirements. In such cases, requirements still existing at the State level could stand to impede interstate commerce and, for the most part, should be repealed, as the Standard Container Acts were repealed at the Federal level. Additionally, continued requirements for standard containers may place undue restrictions on a small segment of the packaging industry which is still involved in merchandising these standard containers.

The containers that were subject to the Acts of 1916 and 1928 are now covered under the provisions of the Fair Packaging and Labeling Act. This means that these containers, when shipped interstate and used as retail packages, must be labeled in accordance with the Fair Packaging and Labeling Act as to identity, responsibility, and quantity in accordance with the packaging regulations. The containers regulated under these acts, when shipped into a State and offered for sale at either wholesale or retail, must be labeled, since both the Model Packaging Regulation and all of the State laws and regulations that I am aware of regulate wholesale and retail sales. Such containers must then be labeled in accordance with the Model Regulation and any requirements adopted by the States in uniformity with the Model.

There is an exemption for the labeling of these packages. This exemption was granted prior to the passage of the Fair Packaging and Labeling Act, and was granted under the authority of the Food, Drug and Cosmetic Act. It states that small open containers of one dry quart capacity or less (normally used for small fruits and berries when shipped interstate) need not be labeled, providing that, when two or more such containers are in a carton, the carton must bear a quantity declaration as required under law. Under the Federal statutes and under the Model Law, which also grants the exemption, such containers do not have to be labeled. If the containers are not open (that is, if they have an overwrap and the labeling appears on the overwrap), it has been interpreted by the Food and Drug Administration that these must be labeled in accordance with the requirements of the FPLA.

There has been some concern by weights and measures officials that, when labeling is not required, the door is left open for nonstandard containers. Therefore, the section in Handbook 44 dealing with berry boxes and baskets should be retained. This is currently under consideration by the Committee on Specifications and Tolerances, and further study must be made before a decision will be reached.

The repeal, quite simply, has no impact unless your law has similar requirements. In such a case, we recommend that the requirements also be repealed. The packages will then come under the provisions of the FPLA and must be labeled as required.

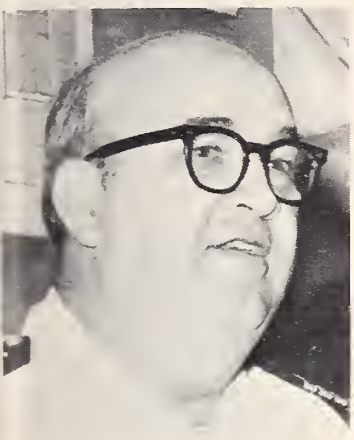
MORNING SESSION—WEDNEDAY, JUNE 11, 1969

(R. L. Sharp, *Vice Chairman*, Presiding)

WEIGHTS AND MEASURES INSPECTION IN FEDERAL ESTABLISHMENTS

DEPARTMENT OF DEFENSE

by Captain A. L. Borchers, *Assistant Director, Personnel Activities and Facilities, Office of Deputy Assistant Secretary of Defense*



Good morning, ladies and gentlemen. I am happy to be here this morning as a representative of the Department of Defense to the Fifty-Fourth National Conference on Weights and Measures.

I believe that most of you here are generally acquainted with the functions and operations of these stores. They are the basic grocery and general merchandise stores operated within the U.S. military establishment to serve the needs of military personnel and their dependents.

I would not like to mislead you in the belief that all of the needs of this patron group are provided for by these stores. This is not so, inasmuch as a considerable amount of their purchasing is still done within the commercial communities in the vicinity of the military installations at which they serve. However, within the fifty States there are slightly more than 1,000 such stores which currently account for slightly less than $2 billion in annual sales of merchandise, foodstuffs, etc.

It is in their role as the purveyor of merchandise and food that these stores become of interest to those of you in attendance at this Conference. In the tentative report of the Committee on Liaison with the National Government preceding this Conference, it was the unanimous view of the Committee that the enforcement of weights and measures requirements in these stores on military bases should be the same as in any other commercial establishment.

In correspondence addressed to the Department of Defense earlier this year, the Chief of the Office of Weights and Measures of the National Bureau of Standards also expressed an interest in working out a system of mutually acceptable procedures which would provide for reasonable weights and measures supervision on military installations aimed at providing for reasonable assurance of quantity accuracy to our military store patrons.

This correspondence outlined the responsibility of the State and local weights and measures officials throughout the United States for

assuring buyers and sellers of goods and services that the quantities delivered are accurate and are accurately represented. The letter further cited that there appears to be insufficient check of commercial quantities in our military stores.

A cursory check of the procedures in this area of weights and measures control presently followed by the Military Services leads me to agree with the foregoing statement. From information available it appears that the only significant action presently taken at the military base or installation level in this connection is limited to the checking or calibration of the weighing devices used in packaging items for sale or in metering products for delivery to the military patron. Even in this endeavor, the use of available State or local authorities or agencies is a sporadic proposition. In summarizing current actions on the part of the Military Services, I would have to admit that current procedures appear far from adequate and quite disparate in application.

However, let me assure you that this present state of affairs does not necessarily indicate an insensitivity on the part of the Military Services to the need of their military personnel for this type of consumer protection. I believe that the record of the Department of Defense and its component Military Departments in protecting the military consumer is quite good. We are actively participating with other governmental agencies in the development and application of programs aimed at both educating and protecting the military consumer.

What is indicated here is that a splendid opportunity does, in fact, exist for the Military Services to take another meaningful step in their overall efforts to protect the consumer interests of their personnel. The willingness of the Department of Defense to work with the the Department of Commerce in the development of a uniform, Defense-wide program of weights and measures supervision in our military resale facilities has already been communicated unofficially to officials within the National Bureau of Standards. At the present time, we are awaiting a formal request from the Department of Commerce that we work with them in this program development. Upon receipt of that request, we will initiate the necessary action to bring the Military Services into conference for the purpose of developing uniform procedures which will be followed by all military installations working with the appropriate State and local weights and measures officials.

There are a number of questions which must be carefully considered in developing such a program involving State or local authority being exercised upon a Federal reservation. It is not my intent this morning to dwell upon these questions in detail.

Suffice to say, I believe they can be effectively resolved to the satisfaction of all parties concerned. It is my further belief that we can

accomplish this without undue delay and I hope that at your Fifty-Fifth National Conference we can report that an effective program has been adopted and implemented at all military installations throughout the United States.

POST OFFICE DEPARTMENT

by J. W. Duchesne, *Director, Engineering Facilities Division of the Washington Region, Post Office Department*

Good morning. It has been an honor for me to be here at your 54th Annual Conference on Weights and Measures.

On June 22, 1965, the Honorable Amos J. Coffman, Deputy Assistant Postmaster General, Bureau of Facilities, Post Office Department, delivered a paper to this Conference entitled "A New Program for Testing Postal Scales."

I can assure you that the program announced by Mr. Coffman in June of 1965 has been successfully implemented within the Postal Service. The program had to be developed and implemented by the Post Office Department within certain economic and policy guidelines; the main guideline being that no additional employees would be added to the work force. In 1965 the regulations of the Post Office Department stated that each postal scale was to be tested annually where testing equipment was available. Unfortunately, test equipment was not available at many postal facilities.

The method developed by the Department is a "maintenance scale testing procedure." The purpose of this scale testing procedure, which does not test to full capacity on scales having twenty-two pound or greater capacity, is to ascertain whether or not a scale requires maintenance attention. The primary reason for a less than capacity test on the bulk of the postal scales is the portability of the test weight kit.

Postal Regulations require that each postal facility be annually inspected, administratively and financially, by a representative of our Postal Inspection Service. The Postal Inspectors have been trained in the maintenance testing procedure and now test each scale at the smaller second, third and fourth class post offices. When a scale is found to be out of tolerance, the Inspector completes a form which has a tear away postcard and tags the scale. The postcard, after being posted as to location, type and probable malfunction, is forwarded to the appropriate Regional Headquarters. At the Regional

Office the scale is scheduled for repair or replacement within thirty days. If the scale is within tolerance, it is tagged as to the date of inspection.

All weighing equipment in the larger first class offices are tested either by postal clerks or maintenance employees following the same testing and tagging procedure.

Only the larger post offices have a mechanical maintenance staff assigned. Those offices not having a maintenance staff are served by an area maintenance mechanic. When required, he travels within his assigned area and provides required maintenance service, including the adjustment and repair of scales. Spare parts are available at local repair offices through the Post Office Department supply system; local stocking criteria for parts has been developed based on the number and types of scales to be maintained.

In addition, a monetary repair criteria has been developed for each postal scale. When a mechanic estimates that the cost of repair will exceed the criteria he arranges for the replacement and disposal of the scale.

Of course, when a scale has been repaired, it is tested to full capacity prior to being returned to service.

Weights and measures officials in a number of locations throughout the United States have voluntarily contributed the services of their inspectors to check Post Office scales within their respective jurisdictions and have called to the attention of the local Postmaster any defective or inaccurate scale in use. Upon notification, the Postmaster causes corrective action to be taken. To these local weights and measures officials, the Post Office Department is deeply grateful.

The scale testing program is continuing and I am sure post office scales are now more accurate than before the program was started in 1965. You may not wholeheartedly agree with our procedure, because we have deviated from the recognized and published procedures of the organizations which you represent. However, please understand that the primary purpose of our maintenance scale testing program, performed to a large extent by employees who have had limited scale experience, is to locate faulty weighing equipment and to cause the timely repair or replacement.

It is a real pleasure to have had the opportunity to be with you today.

THE DEVELOPMENT AND USE OF NATIONAL VOLUNTARY STANDARDS

PROGRAM OF UNITED STATES OF AMERICA STANDARDS INSTITUTE

by D. L. Peyton, *Managing Director, United States of America Standards Institute, New York*

It was a pleasure to accept Mac Jensen's invitation to address the 54th National Conference on Weights and Measures. You, and your associates throughout the United States and indeed throughout the world, as experts in the field of measurement and its application to the well being of the American public, know standards and their utilization.

The Model Law on Weights and Measures adopted by the National Conference some 49 years ago and its continual revision to meet changing needs and conditions stands as an excellent example of sound standardization.

My purpose today is to possibly enlarge on your knowledge and to suggest how nationally recognized and accepted standards, as well as the programs of the Standards Institute, can make your individual efforts more productive and meaningful, particularly in meeting the increasing demands of consumers for better information, acceptable products and improved service.

I am also here to enlist your help in the development and utilization of standards that are *now needed* and will continue to be needed to build on the high standard of living enjoyed by most of our citizens. I would hope that utilizing the standards developing mechanisms of the Institute and its federated members, we might join in a cooperative effort to bring the fruits of American technology, product design, mass production, product distribution and service to an even greater number and particularly to those who for many reasons *need* the standards, the information, the testing, and the product reliability and safety which we know are available. This is a substantial challenge and one which will require the best effort, the best talent, the clear and objective thinking and the all-out commitment which I know you are willing to provide if those of us who administer standards programs are able to provide a meaningful channel for your energies.

Standards are as old as recorded history. They have served mankind since he first started producing goods for purchase by others

rather than only for his personal consumption. As society has advanced and people have lived together in ever growing urban and suburban communities, standards have afforded a means of protection against hazards such as fire, flood, impure water supply, uncontrolled traffic and even recreational hazards. Standards enable men to agree upon certain levels of performance in product and specifications for material as well as on requirements for construction, and installation of utilities and appliances.

In the world of invention and innovation, product development, design and manufacture, standards are essential to progress. Some think that "standard" means static design or standard product and in some way inhibits both the producer and free choice of consumers—nothing could be farther from the fact. The design engineer knows full well that he must be cost conscious if the end product is to compete in the marketplace. He knows that many elements can be standardized—components for example—so that he can turn his attention to solution of new problems or fulfillment of new desires on the part of consumers.

Our present massive array of consumer goods, including time and labor saving appliances, packaged and processed foods, and the many services required to meet consumer demand would be far more costly if it were not for the sound use of nationally recognized and accepted standards by industry. Mass production was built on a system of interchangeable parts; unit cost is lowered by standardized components; packaging and shipping costs are lowered through use of containerized cargo and modern physical distribution systems. Modern retailing depends on safe buildings, modern lighting, air conditioning, refrigeration, display cases, automatic dispensers, metering devices, cash registers, conveyors, elevators *and* the availability of products which the merchant is proud to sell and back. All of these factors depend on the application of soundly developed and nationally recognized standards, such as those made possible by the procedures of the Standards Institute.

Proper use of voluntary standards will mean better products and services for the consumer at lower cost—*providing* we ultimately do as good a job of *using* standards as we have done in developing them, and providing we couple more standards with effective consumer information.

It does little good for example to use the time of several hundred experts in textile technology and related disciplines to develop performance standards for textiles used in linens, shirts and pants only to have the manufacturer or the buyer *fail to use the standard as a means of communicating their respective requirements.* In addition, the development of textile standards, good as they may be, is rather meaningless unless we inform the consumer what adherence to the standard means in clear, simple, easy-to-understand terms.

I wonder, for example, what runs through the mind of a housewife when she sees a label in a refrigerator stating that the particular model contains 16 cubic feet of space. She knows for certain that this is more than 14 and less than 20 but *where* is the space and what does it mean in terms of the food storage needs of her own family?

And, what about the man out to buy a power lawn mower? He will probably find a tag saying that the mower meets the specifications of USA Standard B71.1, but I defy him to tell me what the standard calls for. Is it the length of the handle, the size of the blade, the dimension of the wheels, the horsepower of the motor, or does it specify the housing and safety requirements for the blade? The particular standards in question are technically sound and do provide information. The question is, do they provide the type of information required by consumers in making a purchase?

Before going on I think it would be well to emphasize that a *standard*, be it a standard of terminology, dimension, size, weight, material, method of test, performance rating, safety or even an agreed upon symbol, is *first* an objective means of communication between supplier and manufacturer or manufacturer and consumer. Secondly, it is an economic as well as regulatory (in some cases) instrument, and *lastly* a technical document.

The reason I emphasize first, communication; second, economics or regulation; and last, technical documentation; is because it is all too easy to treat standards as being only the latter, forgetting why standards are needed and *how* they will be utilized by industry, labor, Government (at all levels) and consumers.

This is precisely why the USA Standards Institute was organized to include not a Single Standards Council, but three Co-Equal Councils representative of not just technical organizations but also *Consumers*, *Government* and *Industry*. Communication is our business. Effective communication is essential to the continued success of the Voluntary Standards System. For example, before a project is started, it is quite logical to call together as many interested and affected parties as possible. There is nothing quite as useless as a standard, developed over a considerable period of time and at substantial cost in both manpower and time which ends up gathering dust on a storage shelf. In short, before we begin standards development in a particular field we must determine that there is a "national" need and an expectation that if the standard receives national acceptance, it will be *used* by both supplier and user or consumer. There is, of course, always the danger that one company or industry will attempt to "standardize" something to the ultimate detriment of competitors or the buying public. This is why our procedures call for completely "open" operation and why there are no membership requirements in the Standards Institute for participation in technical programs. It is also why *no*

one company or industry can dominate the Institute's Programs. The small manufacturer has just as much opportunity to make his views known and to have them seriously considered as does the corporate giant.

In the development process, as well as in procedures for approval of standards that meet established requirements, we take quite seriously our obligation to see that "due process" is followed each step of the way. If this were not the case we would have on the books a National Plumbing Code rather than having spent a number of years attempting to achieve National Agreement or "Consensus" as it is most often called. The necessity to arrive at national acceptance makes standardization a tough, complex and often frustrating process.

On the plus side, however, it is why *you*, as Weights and Measures Officials, *and your fellow State Officals* in such fields as motor vehicle safety, health, industrial safety, and a host of other responsibilities, can and should have confidence in the utilization and implementation of USA Standards, where they exist, and where they meet your requirements.

After all, which course of action is the more logical—adoption of a standard developed by a representative cross section of industry, labor, government and consumers and having national recognition and acceptance, *or* duplicating the work by developing one yourself? It seems to me that it is simply good business to utilize the talent of others which, by the way, is freely given and freely available rather than spending taxpayers' dollars to "Re-Invent The Wheel."

The questions most often asked, however, are: "Aren't standards developed through consensus really compromises?" Some even ask: "What is the Standards Institute doing trying to tell *us* what to adopt?" Let me answer both questions.

The quality of a given standard depends almost entirely on the caliber of the participants on a technical committee, their knowledge and experience and their willingness to objectively assess the problem and find a solution. In short, if you want better standards or standards where they do not exist, *participate* on the technical committees and bring the *needs* and desires of your constituents to the Standards Institute. You are in the best possible position to identify areas where standards should be developed and in what form, because you are in the field talking to people, to industry and to regulatory officials.

I can add parenthetically that committees working under Institute procedures *want your help* and *want it badly.* Our problem and that of our members is that we simply are not always able to identify all the well qualified individuals who should be included on a committee, particularly those representing consumer viewpoints.

Turning to the second question, "Does the USA Standards Institute attempt to force standardization on regulatory bodies or legisla-

tures?" The answer is *NO*—we believe that it is the province of Government—Federal, State and Local—to determine when a standard should be included in Law or Regulation. Our primary interest is in seeing that *if* regulations are to be written and *if* laws are to be enacted. they incorporate directly or by reference standards developed by recognized organizations and having national recognition and acceptance.

From the standpoint of *your* consumers, it is far preferable to adopt, where possible, a single national standard rather than some unique requirement. Let me give you an example. While visiting a large appliance manufacturer recently, I learned that his company was forced to manufacture, ship, warehouse, distribute and sell *five* different models of essentially the same product because of differing building code requirements. Technically and by independent test all five products gave the same service to the housewife. All five were equally safe *but* the *cost* to the consumer was higher than it would have been had this manufacturer been able to market a single acceptable product. Incidentally, there are USA Standards covering this particular product, but some of our parochial building officials (State and local) refuse to adopt a uniform standard preferring to write unilateral requirements. In this case *only the consumer* is victimized.

You can help materially to overcome these and similar problems by urging adoption of national standards by your State legislative body or by local code officials. From your experience you know that enforcement is much more effective where precise standards and test methods are available and are used. The Standards Institute is ready and willing to work with any legal or regulatory body that needs information on standards.

In the short time remaining, I will outline a number of steps the Institute is taking to improve the development, approval and promulgation of standards that may be required in Commerce, industry and consumer satisfaction. A number of valuable lessons have been learned in the years the Institute has been in existence, but possibly the most valuable lesson is one from a great sermon, often quoted, "No Man Is An Island." We learned long ago that *no organization, public or private*, has the built-in capability to develop standards acceptable to all facets of society.

Effective standards depend upon the availability of willing talent representing such diverse fields as engineering, economics, distribution and retailing, product service, design and manufacture, law and in many instances government officials responsible for public health and safety. We have experienced unilateral development and promulgation of standards but have been unable to ascertain a single instance where such a process has come close to fulfilling the anticipated results of those who attempted to dictate results by fiat.

Effective standards depend not on "authority" but on the ability to organize existing competence from all sources in industry and government and coordinate their combined efforts to achieve the best possible result.

The role of the Standards Institute, while varied, is primarily that of standards coordinator. We depend entirely on trade, technical, labor, government and consumer groups to provide the competence required on technical committees. We depend on these organizations to join with us in recognizing and identifying standards needs, helping to establish priorities, and to then work as efficiently as possible to find viable solutions to the many problems that confront us.

We know that the procedures for standards development must be improved and that means must be found to develop and promulgate standards when they are needed—not when they become the coffins in which to place the bodies.

In recent actions, the Institute's Board of Directors has approved the implementation of new procedures which will separate the *administration* and *approval* of standards submitted for national recognition. In this way we will be able to concentrate the vast amounts of voluntary talent available to see that standards are developed on a timely basis with the broadest possible participation of affected interests.

Approval or as it is better stated—recognition and acceptance—will be the responsibility of a single board of standards review reporting to the Institute's Board of Directors.

The most important feature of the "new look" is that all standards proposed for Institute recognition will first be subjected to a period of public review and comment. While we do not have a "Federal Register" to disseminate information we are now developing a nationwide mailing list of local, State, and regional organizations interested in standards and their impact on consumer satisfaction and such public needs as health and safety. We want to enlist *your* State and regional organizations in this effort in order that you may be notified and may through this educational process finally become an *active* participant in the development of public opinion on proposed standards.

Finally, the Institute is taking the next giant step required if we are to successfully couple technical standards and meaningful consumer information. We have initiated a certification program under which we will license our mark to producers and/or distributors whose products are determined *by independent test* to meet or exceed the requirements of USA Standards. You will note that I mentioned three key words—"by independent test"—this is critically important if consumers are to have confidence in products and confidence in certification marks. The viability of so-called self-certification is being

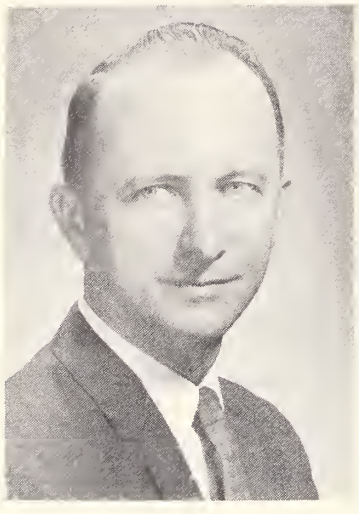
seriously questioned in many circles these days, but particularly by the national Commission on Product Safety which is continuing its investigation of product safety as well as standards development, testing, and legal structure.

As weights and measures officials, you should be seriously interested and challenged by improvements that are being made in the field of standards development and ultimate use. There is no doubt that you will be among the first to see products on retailers' shelves bearing various seals of approval, including that of the Institute, in due time. What better service could you possibly perform than to be an active participant in the standards by which these products may be tested, both for performance and safety? What better service could you possibly perform for your constituents than to work with the Institute, with your own organizations and through the National Conference on Weights and Measures to subject these systems and their results to the objective but thorough inspection you make every day in your official capacities?

Our *mutual* effectiveness and our continued success will depend on our willingness to roll up our sleeves and get in the "game" not as sideline observers or Monday morning quarterbacks, but on the field where the action is.

PROGRAM OF U.S. DEPARTMENT OF COMMERCE

by D. R. Mackay, *Chief, Office of Engineering Standards Services, National Bureau of Standards*



It is a pleasure to have this opportunity today to speak to you about the Commerce Department's Voluntary Product Standards Program. This program is a responsibility of the NBS Office of Engineering Standards Services. The last time I was privileged to speak to you, I was an engineer on the staff of the Office of Weights and Measures.

The Managing Director of the U.S. Standards Institute has already discussed a little of the history of standards, and has explained the need for standards as well as the benefits of standardization activities. After hearing Mr. Peyton's description of the functions and activities of the largest private standardization organization in the U.S., you may be wondering why a government program exists and where it fits into the national standards structure. In addition to answering these questions, I would like to give you an idea of our function and how we assist in the formation of standards.

Let me begin by mentioning the requirements which must be met before the Department participates in the development of a standard. First, the proposed standard must not be contrary to the public interest. In this requirement are three essential words which are the key to the purpose of our program— the words are—"the public interest." The Government's program is first and foremost a service to the public, to the producers of the products standardized, as well as, to the distributors and users of these products. Secondly, a proposed standard, to be considered, must have potential national effect or implication. Our program is not concerned with local or regional problems. Thirdly, a standard must have apparent industry-wide interest or endorsement; otherwise, it might be foolish to initiate the development of a standard. And finally, the standard must be such that it cannot be processed according to the *needs* or *desires* of the industry by a nationally-recognized, private standardizing body. In other words, we are not in competition with private groups, instead we exist to complement their activities, and to serve the public interest.

The Government's voluntary standards activities began during World War I. At that time, industry-government cooperation was essential to the war effort. The Conservation Division of the War

Industries Board was created to see that the largest possible amounts of labor, capital, materials, and equipment were released for the war effort. The government-industry program was established to conserve materials and eliminate waste through standardization and simplification of varieties and sizes of commonly used, mass-produced items.

But when the war ended so did compulsory standardization and many manufacturers quickly returned to the old uneconomic conditions of over-variety. The situation was aggrevated in 1921 when a delayed post-war depression struck and manufacturers felt they had to offer variety to obtain more sales. Herbert Hoover, as a prominent engineer and later as Secretary of Commerce, was one individual who was so concerned about this situation that he sought to rid industry of waste through the establishment of standardization programs.

Herbert Hoover's personal philosophy about government and industry goals and their interaction in what is known as "society" is just as appropriate today as it was nearly 50 years ago. This philosophy was summed up by Hoover in the following quotation: "The primary duty of organized society is to enlarge the lives and increase the standards of living of all the people. The whole basis of an increased standard of living, of better human relations, of national progress - indeed, of the advancement of civilization - is the continuous improvement in production and distribution."

In 1921, while he was President of the American Engineering Societies, Hoover appointed a committee to study the then-existing conditions of waste in industry and to make suggestions as to possible remedies. The committee studied six typical industries and found that preventable waste of labor and materials averaged almost 50 percent in those industries. The committee's report entitled "Waste in Industry" estimated that 10 billion dollars a year—1921 dollars—could be saved through standardization and simplification alone.

The committee's report suggested that the Government should play an active part in the formation of industry standardization committees. When he became Secretary of Commerce, Herbert Hoover had the opportunity to implement this recommendation. He established, within the Department of Commerce, a Division of Simplified Practice. This Division played a major role in promoting the development of voluntary industry standards. Its publications, entitled "Simplified Practice Recommendations," provided for the voluntary reduction of the number of sizes and varieties of many products. For a time it led a massive national drive for standardization. In 1927, the scope of the government's activities was broadened to include a Commercial Standard Unit which developed, cooperatively with industry groups, standards establishing quality requirements for specific products.

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Through the years, the program has been assigned to different offices within the Department of Commerce, and the National Bureau of Standards. It has changed names several times, and it has experienced consolidation: the Simplified Practice Division and the Commercial Standards Division were merged into the Commodity Standards Division within the Department of Commerce.

In 1963, a reorganization resulted in the work being transferred back to the National Bureau of Standards. At this time, it was decided that instead of two publications, Commercial Standards and Simplified Practice Recommendations, only one publication series would be issued—to be called "Product Standards." These standards can include quality requirements as well as simplification practices. The one thing that has not changed with time is the goal of the program: to aid industry in the development of standards which are deemed to be in the *public interest.*

Our procedures, revised in December of 1965 and amended May of 1968, reflect the emphasis on this goal. I would now like to summarize those procedures for you. The process begins when an interested group, whether made up of producers, distributors, consumers or users, testing laboratories, or representatives from a Government agency, requests that NBS participate in the development of a voluntary standard. The Bureau then determines whether the request is feasible and whether it conforms to the requirements I mentioned previously, including—is it in the public interest? If the request is approved, a specific proposal is developed in consultation with interested trade groups and interested Government agencies. This proposal is then subjected to an editorial review within the Bureau as well as an impartial technical review by an appropriate Government agency or by several agencies interested in the standard. If it is appropriate, the technical review may be accomplished by an unbiased group outside the Federal Government. A draft of the proposal is then circulated for consideration and comment to interested groups, including consumers and users.

At this point, a Standard Review Committee is established to review the amended draft, which incorporates the suggestions received from all segments of the industry. The procedures specify that the Standard Review Committee must be representative of all groups interested in the product for which the standard is sought. It is also our policy to see that small business, as well as big business, is represented on the committee. Once the committee approves the proposal, it is distributed to known producers and a representative sampling of distributors, users, consumers, and general interest groups for final consideration and acceptance. Any objections received from these groups are carefully considered by NBS. If there are no significant objections and if the proposal is supported by a "consensus," the Bureau editorially re-

views the standard once again and announces the approval of the proposal as a Product Standard, if all criteria have been fully met.

Finally, prior to the printing of a Product Standard, a Standing Committee is named to review the standard within five years of its issuance, to consider any proposals to revise or amend the standard, and to provide such interpretations as may be required. This committee is essentially identical to the Standard Review Committee as to membership and procedures. A standard, then, is submitted once to an impartial group for technical review, once to a special committee made up of representatives from the interested groups and twice to the general industry for consideration. It should be noted that any individual or company is at liberty to comment during either distribution to the industry. Generally, a press release is issued when the proposed standard is distributed for initial comments and always when the recommended standard is distributed for acceptance.

At this point, let me explain what is meant by "consensus." The latest amendment to our procedures established a specific definition of consensus in terms of *numerical* percentages. It is now required that a standard be supported by at least 70 percent of those responding to the distribution of the recommended standard in the production segment, in the distributor segment, and in the user or consumer segment of the industry. Furthermore, the procedures require that the average percentage of acceptance for each of the three segments be not less than 75 percent. The amended procedures also provide a second definition for consensus which involves lower percentages. This alternative definition is implemented for standards which are considered to be in the public interest but which did not receive the percentages of acceptance previously mentioned. Under this second procedure, the minimum acceptability in any segment of the industry must be not less than 60 percent and the average of the three segments must be not less than 66⅔ percent. This procedure also involves the holding of a public hearing to allow the Department to substantiate the importance of the standard to the public.

I now would like to enumerate the specific responsibilities of the National Bureau of Standards and of the group proposing the standard. The Bureau assists in the formation of a voluntary standard through the following: It acts as an impartial coordinator in the development of the standard; it provides editorial assistance in the preparation of the standard; it supplies such assistance and review as is required to assure the technical soundness and clarity of the standard; it sees that the standard is representative of the views of producers, distributors, users and consumers; it seeks satisfactory adjustment of valid points of disagreement; and finally, it publishes the standard.

The group proposing the standard, and the industry which is affected by it, have the responsibility of: initiating and participating in the development of a standard; providing technical counsel; and promoting the support for and use of the standard.

Our voluntary standards may cover definitions, classes, sizes, dimensions, capacities, quality levels, performance criteria, testing equipment, and test procedures. They may vary in scope from the most complex requirements for precision instruments to size standards for the simplest of items such as 2 x 4 lumber. At present, we have only a few published Product Standards that are of interest to weights and measures officials. These include, among others, Commercial Standard CS 1–52, "Clinical Thermometers," and CS 8–61, "Gage Blanks." In the Simplified Practice Recommendation series we have SPR 252–60, "Standard Sizes of Pint, Quart and Half-Gallon Rectangular Ice Cream Cartons and Molds," R 155–49, "Cans for Fruits and Vegetables (Names, Dimensions, Capacities, and Designated Use)," and R 253–54, "Retail Container Sizes for Frozen Fruits and Vegetables." I would like to note at this point that the Scale Manufacturers Association has requested Bureau assistance and cooperation in the development of voluntary standards for concrete batching scales, for bathroom scales, and for the installation of motor truck scales. We look forward to working with the scale industry in the development of these standards and hope that this initial effort will encourage others in the weights and measures field to consider the possibilities of utilizing our procedures, our facilities, and our services to alleviate, if not eliminate, their problems, through the development of voluntary standards.

One of the primary purposes of a standard is to provide a means of communication between individuals—whether they be producers and users, buyers and sellers, or industry representatives and government officials. If we, through the development and publication of a voluntary Product Standard, can provide a better understanding of the characteristics of that product and, at the same time, improve the quality of that product, we will have made a contribution to the society in which we live. You, as weights and measures officials, can assist us materially in our efforts to develop good standards that are "in the public interest."

You may recall that I mentioned two committees that play important roles in our standards program—the Standard Review Committee and the Standing Committee. These committees are made up of representatives of producers, distributors, consumers or users, and general interest groups. In all cases we attempt to seek out and appoint individuals who are knowledgeable and well qualified to represent the views of a particular segment of the industry, and, at the same time,

honor and uphold "the public interest." I don't know of a better group to represent consumers and users than weights and measures officials. This is particularly true in areas in which you people have responsibilities such as in the packaging and labeling of consumer commodities.

At the present time we are processing four packaging and labeling standards through Standard Review Committees which have, as consumer representatives, various weights and measures officials. Don Konsoer from the State of Wisconsin is serving on our committee for the packaging and labeling of instant non-fat dry milk; Dick Thompson from the State of Maryland serves on our committee for green olives; Earl Prideaux of Colorado is concerned with our standard for instant mashed potatoes; and Matt Jennings of Tennessee is concerned with package sizes of toothpaste.

I personally feel, and I know that Mac Jensen agrees with me, that weights and measures officials make good representatives of consumers and users. They are knowledgeable, fair, objective, and interested. It is our intent to rely more and more on people such as yourselves to assist us in the development of standards and to serve on our committees. I hope that when called upon, you will serve without hesitation—and indeed without compensation, except for the knowledge that you have served the people of our great nation.

In closing let me say that I have had two prime objectives today—one was to enlighten you about our standards program and the second was to encourage your participation in the development of voluntary Product Standards. I hope I have been able to accomplish these objectives. Thank you very much for the opportunity to attempt to do so.

THE ROLE OF WEIGHTS AND MEASURES OFFICIALS IN THE METRIC STUDY

by A. G. Mcnish, *Assistant to the Director for Metric Study, National Bureau of Standards*

I want to address myself to two topics. First, I should like to describe the law under which we are operating, and in general, indicate the plan we have for conducting the metric study; and second, I should like to take this opportunity to appeal to the Conference for such help as you can give us in carrying out this study.

The law does not address itself to the problem of a general conversion to the Metric System. Section 1 of the Act says, "The Secretary of Commerce is authorized to conduct an investigation of the impact of increasing worldwide use of the Metric System on the United States; to appraise the desirability and practicability of increasing the use of metric weights and measures in the United States; to study the feasibility of retaining and promoting, by international use of, dimensional and other engineering standards based on the customary measurement units of the United States; and to evaluate the cost and benefits of alternative courses of action which may be feasible for the United States."

This is very wisely stated. In the past, Metric Study bills have failed—even failing to get out of committee, in many cases—because they were too restrictive in what course such a study should take. This bill (now PL 90–472) has remedied this difficulty and even those who have been opposed to a study or opposed to increased metric use in the United States have come out to endorse this particular bill because of its balanced approach.

What do we mean by the Metric System? The Act refers specifically to an international standardized system of weights and measures. As such, this means the International System of Units, with which many of you are already familiar. It is interesting to see that many of the units of the International System are already widely in use in the United States. For example, all of our units for electrical and illumination measurements are the international units. These units are established and defined by law, and so we are partially on the International System already.

To be asked are the questions: How far should we go, and, should we increase this usage in any way? The bill is quite definite. Section 2 refers to increased use generally or in specific areas. Clearly, this act is not directed to general use alone, although general use of the Metric

System could be one of the recommendations which the Secretary can make to the Congress. It does not limit us to a choice between all or nothing.

To evaluate courses of action which we can take, we have set up certain guidelines and considerations and defined certain terms. Increased use of the Metric System can take several forms.

The simplest one is what we call accommodation. This is the type of response that we make when traveling in Europe where we see meat for sale in a French butchery at so much per kilo, and we scratch our heads and say, "Well, a kilo is 2.2 lbs., and the franc is worth 20 cents, therefore the price of meat in France is just about the same as it is in the United States."

We have made a translation. If we buy meat regularly, we would forget about translating because we would know that one kilo beefsteak is a good sized beefsteak and a half-kilo beefsteak is enough for a hungry man—who's not too hungry. This is accommodation.

The next degree is adaptation. In this case, one uses dual labeling. We see this taking place today in our stores. We made a survey recently of one of the large food stores and found that 45 percent of the canned goods on the shelf were packaged with dual dimensions, so that if they were sold in a metric country, the customer could read the contents in metric units just as well as we could read the contents in our customary units.

Now, the important thing in this adaptation process is that one does not change the size of anything. One merely relabels and refers to the size by a new name. Since there is no change in the size of anything there is obviously little impact upon the business concerned as compared with the impact if sizes were changed.

The third degree is what we call conversion. In this case, the sizes and the designs of things are changed. We start out with a new product. We redesign it, thinking in terms of metric units, so that if we want something this long, we don't say "Make it twelve inches," we say "Make it 30 centimeters," (which is almost twelve inches) and build our product around that. We would use, as far as possible, international metric engineering standards in the design. We would use, in many cases, metric screw threads.

It seems to us in our studies so far that if we increase the use of the Metric System in the United States, many people will follow one or the other of these degrees. Some will follow all three in some cases. Some will not go to conversion, but will go to adaptation. Others will get along for a long time with accommodation.

What will increased use of the Metric System do to commodity trade in the very areas in which weights and measures enforcement operates?

For example, should we recommend to the Congress that laws be passed so that consumer commodities be sold in one system of units

only and that that system should be the Metric System? What will this mean to the American public? Also, what will this mean to the activities of weights and measures officials? How much would have to be changed? How much will it cost to make these changes? What are the impacts on retailers?

I do not know of any group that would be more effective in helping us in this particular field than the National Conference on Weights and Measures. In fact, in asking for your help, I am only doing what the law really requires of us. Section 2.6 states that we shall consult and cooperate with other government agencies, Federal, State and local. This cooperation is necessary to insure that problems of government involving measurements will be adequately recognized, since if changes are made, it may be necessary to change laws and some procedures.

Another problem to be considered is: Would the Metric System be acceptable in the ghettos, both big city and rural? There are places where people have not had the advantages of education and training such as we have had; people may think, perhaps, that they are having something put over on them if we change our units of measure. For instance, if we begin selling milk by the liter, which is just 5 percent more than a quart, and then increase the price 5 percent, will they not think that the price of milk is being boosted for no good reason? Might they not go into a store and say, "There's a piece of beef. They've changed the price from $1.00 a pound to $2.00 a pound, only they don't call it a pound anymore, they call it a kilo."

What will the problems be in packaging? We have just examined the recommended sizes of cans. The popular can of condensed soup contains almost exactly 300 milliliters. If it is filled to 90 percent of its volume which is recommended under good practice as the minimum amount of filling, it contains a little less than 300 milliliters. If it is filled to its capacity, it's a little more than 300 milliliters, so we are here dealing with a can which we have described in our customary units and we find that in metric units, it is a round number.

Will we eventually want to go to round numbers in metric units for packaged goods? I am thinking of the program which follows this, the panel on the fair packaging and labeling, where we find that there are certain advantages in trying to package as far as possible in round numbers for the simplicity and ease of a consumer in calculating price per unit. Now, would there be some advantage in going metric, even if we do not use round numbers, because then one can figure how much one is paying per unit of quantity, more easily than when dealing with the rather complicated computations that one encounters in the U.S. Customary System having combination of pounds, ounces and common fractions thereof? These are the questions to which we need answers.

In brief, let me tell you of the relations we have had with representatives of the manufacturing industries. We recognize their problems,

and are receiving wonderful cooperation from them. Mr. Peyton, who spoke to you earlier, has established an Advisory Committee on the Metric System in the United States of America Standards Institute which is assisting us in a highly significant way. We have found that some of the people who used to be strongly antimetric have turned around and said, "Let's take a good look at this. Let's see what we can do. Let's see what advantages will come from it and what would be the disadvantages. What are the problems and how easily can we get along with them?"

Let me outline our thinking in this area. Suppose we find it is advantageous to the manufacturing industries to increase the use of the Metric System and of metric standards; that this will help them in their domestic and foreign operations and in their dealings with foreign customers. We must then examine the questions: Can the manufacturing industries go metric for industrial goods and not have the Metric System used for consumer goods? Would this be a wise and useful policy? Is it suitable, is it practical to operate on a dual system, to use the Metric System in manufacturing and the customary system in everyday trade?

We do not know the answers to all of these questions, but we do know that we must get answers to them.

With all of this in mind and aware of the problems, I have asked your Executive Secretary, Mr. H. F. Wollin, to bring before your Executive Committee a resolution to establish a task force within the Conference to work with us and to advise us on the problems within the areas of which you are most knowledgeable. I hope this will receive favorable action and that we will have your wholehearted cooperation in this very difficult undertaking. Thank you very much.

DISCUSSION

Mr. Leland Gordon—My question is whether your committee has conducted, or intends to conduct, a survey among consumers to ascertain their knowledge of the present system of weights and measures. I made a spot survey twelve years ago among high school and college students and faculties. I gave them ten simple questions and the failure rate was dismaying.

Mr. A. G. McNish—Let me say that the failing rate on this test you gave doesn't surprise me. Recently we asked a number of secretaries at the Bureau, "What is the boiling point of water in Centigrade." Most of them didn't know because they don't think of anything except Fahrenheit. People are just amazingly ignorant about systems of measurement. Gallup made a poll in 1965 to find out how many people knew what the Metric System was. The figures were amazingly low.

About 90 percent of those with only an 8th grade education did not know what the Metric System was. But I don't know how much better

off those people would be if you said, "How many gills are there in a pint?"

To specifically answer your question: Yes, we are planning surveys.

SPECIAL AWARD CEREMONY FOR M. W. JENSEN

Presented by J. F. Speer, *Chairman, Industry Committee on Packaging and Labeling*

Chairman Sharp, Conference officials, ladies and gentlemen, the year 1963 was a critical one for manufacturers and distributors of consumer commodities. Congress was conducting investigative hearings on packaging and labeling practices. State weights and measures officials and officers of the National Conference were pressing for more strict and specific laws and regulations on the same subject. Several States had adopted or were proposing conflicting regulations for conspicuous quantity declarations. The prospect of substantial nonuniformity of labeling regulations among the several States became so alarming that representatives of industry in December of 1963 organized what is now known as the Industry Committee on Packaging and Labeling.

All interests affected by the new regulatory proposals were invited to join the Industry Committee in a constructive and cooperative effort with the National Conference to develop a model State packaging regulation and to support its legislative or administrative adoption by the States.

Major contributions to the ultimate adoption of the Model State Packaging Regulation were made by the distinguished Conference Committee on Laws and Regulations.

Among all of the official and industry contributions to the successful achievement of this national consumer protection model, none played a more effective role than Mr. Malcolm W. Jensen, Chief of the Office of Weights and Measures of the National Bureau of Standards and Executive Secretary of the National Conference.

It was Mac Jensen who supplied the dynamic liaison between the Industry Committee and the National Conference. It was Mac Jensen who acted as the catalyst with industry's task forces to resolve every last doubtful sentence, clause, phrase and term in favor of the fullest and clearest commitment to consumer protection.

Mac is moving on to even greater responsibilities in the National Bureau of Standards, and we wish him continued success in these new endeavors.

On this occasion, the Industry Committee wishes to present an award which records our grateful acknowledgment of his spendid contributions to the uniformity of law and the consumer welfare.

For the benefit of all, I would like to read the illuminated scroll:

"Award to Malcolm W. Jensen for outstanding public service as Chief, Office of Weights and Measures, National Bureau of Standards, and Executive Secretary, National Conference on Weights and Measures, on the occasion of his elevation to the Office of Deputy Director, Institute for Applied Technology, National Bureau of Standards, United States Department of Commerce, Presented by the officers and members of the Industry Committee on Packaging and Labeling this 9th day of June, 1969."

Malcolm W. Jensen accepting award for outstanding public service from John Speer.

ACKNOWLEDGMENT BY M. W. JENSEN

John, members of the Committee and friends of weights and measures. This is, as you all know, a big surprise and it's accepted with gratitude to all of you.

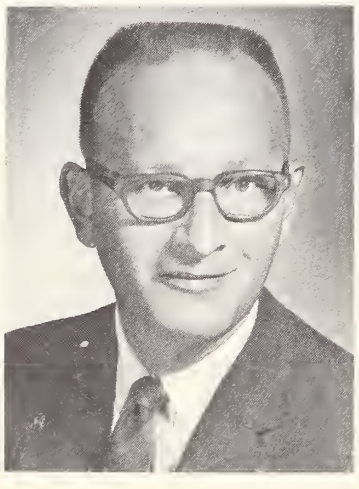
Those of you who are on the Industry Committee on Packaging and Labeling and on the Committee on Laws and Regulations, and many others know that the road to the Model Regulation and ultimately to the good or bad in the Fair Packaging and Labeling Act is paved with blood, sweat and tears.

I think one of the finest experiences I have had in weights and measures has been the demonstration of the willingness of people, regardless of their professional affiliation, to work in the public good. The Industry Committee, although they were to be regulated, pitched in without exception and contributed to a document that I am convinced served to the good of all people. So to John and the Committee and to all of you for your help and cooperation through all the years, many, many thanks.

PANEL ON FAIR PACKAGING AND LABELING

E. A. Vadelund, *Weights and Measures Coordinator, Office of Weights and Measures, National Bureau of Standards, Moderator*

INTRODUCTORY REMARKS



Good morning. I would now like to call upon the rest of our panel members to join me. They include Mr. John Gomilla of the Food and Drug Administration, Mr. Earl Johnson of the Federal Trade Commission, Mr. R. O. Jolin of the Internal Revenue Service, Dr. W. J. Minor of the United States Department of Agriculture, and myself representing the Department of Commerce.

Our purpose here this morning is to provide an opportunity for you to have at least some of your questions answered by representatives of the five federal agencies with responsibilities in the packaging and labeling area.

Each panel member will give a short presentation, after which the entire panel will respond to questions. Cards have been passed out to you to write down questions if you wish, and questions from the floor are also encouraged.

Remember this is an audience participation show and it will not be successful unless you participate. The prizes hopefully will be better understanding and better administration of weights and

measures requirements. With those few simple rules, I think now we will proceed to attempt to satisfy the irritated without unduly irritating the satisfied.

ROLE OF FOOD AND DRUG ADMINISTRATION A RECAP OF THE FIRST YEAR

by J. Gomilla, *Assistant to the Director, Food and Drug Administration*

We greatly appreciate the opportunity to discuss the Fair Packaging and Labeling Act with you today. We hope we can convey a deeper insight into not only the satisfying challenge presented by this new piece of legislation, but the frustrations as well.

Few Consumer Laws have had a similar impact on the labeling of consumer commodities. Virtually every label of every consumer product was affected and required modification. The costs involved were tremendous. Ironically, these costs are in large measure being borne by the very consumers the law was designed to assist. A lengthy discourse at this time on the merits, or if you will, shortcomings of the Fair Packaging and Labeling Act would serve little purpose except to reaffirm the time-worn expression that "hindsight has 20/20 vision." I shall, instead, attempt to detail what portion of our responsibilities we have been able to discharge over the past year within the framework of the resources we were provided.

The Food and Drug Administration initially set the stages for implementing the Fair Packaging and Labeling Act by meeting with Federal and State officials, and representatives from industry. On the basis of these meetings, and information gleaned from other sources, the proposed regulations for foods were published in the Federal Register March 17, 1967. The comments received as a result of the proposal, which included a significant response by State and local officials, were of invaluable assistance in the drafting of the order ruling on the proposed food regulations, published July 21, 1967. The order ruling on the objections to the food regulations, published September 20, 1967, also reflects in a significant way views and suggestions of State officials. The point to be emphasized by this chronology is that while the Food and Drug Administration, in both a legal and practical sense, has the final responsibility for issuing and interpreting regulations for foods, drugs, devices, and cosmetics, the task is a joint endeavor.

The rule-making procedures that we must legally abide by are set

forth in § 701 of the Federal Food, Drug, and Cosmetic Act, and when adhered to, provide a public record for all to see. To those who criticize or attempt to circumvent the rule-making procedures, we can only comment that they provide the safeguards necessary to prevent the issuance of regulations which are arbitrary, unfair, or are not in the best interest of the consuming public. Since uniformity of enforcement is of paramount importance, the ground rules must also be uniform, and of necessity, must emanate from one focal point. The Food and Drug Administration is attempting to provide leadership in the establishment of the ground rules and is promoting uniformity with every means at its disposal. If uniformity is a bulwark in equitable enforcement, then it follows that there should be no conflict between the Fair Packaging and Labeling Act regulations and those which may be adopted by the various States.

The Fair Packaging and Labeling Act has, as a somewhat unique aspect, a feature in § 5(b) which mandates that when either of the responsible agencies finds that full compliance is impracticable in a given commodity or not necessary for the adequate consumer protection, such agency *shall* issue regulations to exempt the commodity from certain of the requirements. The Fair Packaging and Labeling Act, therefore, obliges the Food and Drug Administration to publish any petition for exemption which is adjudged to be supported by reasonable grounds.

In spite of feelings to the contrary sometimes expressed by State officials, publication of a proposal for exemption in the *Federal Register* does not automatically indicate that it will become a final regulation. Neither does it indicate or imply endorsement of the proposal by FDA. It is at this stage that the rule-making procedures of § 701 come into play and your meaningful comments on the proposal are not only solicited, they are extremely necessary to ensure a proper ruling on the petition. Your comments, of necessity, should be more substantial than a simple "yes" or "no," since they form a public record that documents the handling of the petition.

As of this writing, the Food and Drug Administration has published eight exemption petitions which weathered the rule-making procedures to become final regulations. The comments received for two additional proposals are being evaluated. Two published proposals were terminated when comments from State officials and other relevant information demonstrated the exemptions were not in the best interest of the consumer. We are firmly convinced that every exemption granted thus far has satisfied the requirements of § 5(b) of the Fair Packaging and Labeling Act. Granting exemptions for good cause is not tantamount to giving away the Act. As a matter of fact, for every proposal that was published, three were denied publication as insubstantial, unwarranted, or not supported by reasonable grounds.

When Congress enacted the Fair Packaging and Labeling Act in November 1966, the effective date was set as July 1, 1967. Section 13 of the Act authorized the Secretary of Health, Education, and Welfare to postpone the effective date for one year if it was found to be in the public interest. The Secretary exercised the authority and the effective date was postponed to July 1, 1968. Recognizing that label manufacturing facilities were not available to complete the changeover by that date, the Commissioner issued Statement of Policy, § 3.57, on July 21, 1967. This policy statement set forth the criteria by which firms, with a showing of good faith, could obtain additional time beyond July 1, 1968, to complete revisions. More than 3300 firms qualified for extensions and were given an additional year, or until June 30, 1969, to comply. The interpretation of "good faith" varied throughout the industry in at least one noticeable area. Many firms immediately began utilizing their revised labels when they were secured, as is evidenced in the marketplace. A lesser number of firms are still utilizing labels that are not in compliance with the FPLA. Though we recognize the economics involved, and realize that such firms are still within the time period of their extension, they are reminded that consumer commodities which are foods, shipped in interstate commerce after June 30, 1969, should be in compliance with the Fair Packaging and Labeling Act, the Federal Food, Drug and Cosmetic Act, and the laws of the respective States.

Many of the more than 3300 firms that received extensions initially have asked for additional time. The conclusion is obvious that a blanket extension of time beyond June 30, 1969, for all firms is neither in the public interest nor in keeping with the expressed intent of Congress. We recognize, however, that there may be circumstances of an unusual nature which warrant further time. In such instances, if more time is granted, it will be only for a designated period, and will cover only a specific label or labels. The appropriate State regulatory officials will be kept fully informed of any such extensions.

The Fair Packaging and Labeling Act directs each responsible agency to make a report to the Congress each January of the accomplishments during the previous fiscal year. Apart from the various regulations and exemptions published by the Food and Drug Administration in the *Federal Register*, we held more than 6,500 conferences, meetings, or other contacts with industry, both at headquarters and throughout the field. Our people delivered almost 500 speeches to industry and consumer groups, that were all or in part on the Fair Packaging and Labeling Act, reaching an audience estimated to be in excess of 50,000. In addition, an estimated 65 television appearances, radio programs, and newspaper or magazine articles on the Fair Packaging and Labeling Act have been used by FDA throughout the country to reach an even broader cross section to facilitate voluntary compliance.

Our efforts to bring the Fair Packaging and Labeling Act message to the States began with a series of nine regional meetings, held during 1968, and attended by more than 200 Food and Drug and Weights and Measures officials representing 47 States. These meetings served to furnish officials with background, update them on the current status of the Fair Packaging and Labeling Act, and furnish them an opportunity to voice their views about the law and how it should be enforced. Most indicated they would push for laws in their respective States which were compatible with the Federal statute. One complaint shared by all was the need for more and better guidance on Fair Packaging and Labeling Act from the Federal level. We are in wholehearted agreement that more information on the Fair Packaging and Labeling Act should be disseminated to State officials. We have attempted to bring you the message, but are also obliged to work within the framework of our allotted budget and personnel. Regrettably, in view of this, only a minimum amount of guidance has been forthcoming. In an effort to rectify this, we have prepared a Fair Packaging and Labeling Act Manual for State officials which will be distributed shortly. This manual will prove to be a valuable assist to your enforcement activities since it contains interpretations of the regulations both by section, and as they apply to given commoditites. The manual, presently covering foods, will later encompass the regulations for OTC drugs, devices, and cosmetics which are scheduled to become effective December 31, 1969. The manual is also designed to be updated at intervals. Such a manual will furnish officials with an insight into the enforcement philosophy we hope will be adopted uniformly throughout the country.

We have been frequently asked to spell out to what depth the Food and Drug Administration will become involved in the enforcement of the Fair Packaging and Labeling Act. How deeply we become involved is governed by many factors beyond the control of us as individuals, or often beyond the agency itself. We presently are involved chiefly in establishing ground rules by writing regulations and formulating an enforcement philosophy. How far we proceed beyond this stage will ultimately depend on a demonstrable need to get involved from a regulatory standpoint and what personnel or budget is made available to us. Indications at present are that only minimum coverage in economic areas will be made during the coming fiscal year and no funds are being designated for enforcement of the mandatory requirements of the Fair Packaging and Labeling Act, or to permit work on the discretionary regulations authorized by § 5. The conclusion is, therefore, obvious that day-to-day enforcement of the Fair Packaging and Labeling Act will largely be a function of the States. If the States assume this responsibility, we trust they will recognize that the Fair Packaging and Labeling Act goes far beyond weights and measures and encompasses many other aspects of labeling

as well. Further, uniformity of laws, regulations, and enforcement philosophies are not only desirable, they are a necessity for the regulatory bodies and a right for those in industry who seek to voluntarily comply.

The circus-like atmosphere that often surrounds the immediate aftermath of consumer legislation has largely dissipated. The agencies assigned the tasks of implementing the Act are earnestly trying to do so with regulations that are fair, meaningful, and which carry forward the intent of Congress. The enforcement must be a joint venture for all concerned if the consumer is to reap the benefits of this legislation.

ROLE OF THE FEDERAL TRADE COMMISSION

by E. W. Johnson, *Attorney, Bureau of Deceptive Practices, Federal Trade Commission, Washington, D. C.*

In reviewing the remarks of the former head of the Bureau of Deceptive Practices, Mr. Charles Sweeney, who was addressing your 52d Conference, I note that he complimented you on the timeliness of your meeting. I again extend that compliment because the Federal Trade Commission in the last ten days has taken some very large strides to further implement the Fair Packaging and Labeling Act.

Before I attempt to briefly summarize this progress, I would like to point out that I am expressing only my personal comments and opinions—not officially those of the Commission. There are several questions yet to be resolved concerning the proposals.

On May 27, 1969 the *Federal Register* carried the disposition of the objections made to the final FTC regulations published on March 19, 1968. This cleared the way for the regulations to take effect on the formally prescribed date of July 1, 1969. The delay in disposition did cause the January 1, 1969 date concerning the ordering of packaging and labeling materials to be adjusted but that was transitional and is not now considered to have any marked effect on the July 1 date ahead. Quickly, there were some 18 registered objections made to 9 different sections of the regulations. The majority of the objections were handled by staff level interpretation or explanation. One objection resulted in our printing a redraft of Section 500.18 to clarify that the elimination of tops, bottoms, flanges, shoulders and necks of containers when calculating the area of the principal display panel applied to *all* subsections. Finally, there was one objection which the Commission considered to warrant a public hearing. This was an objec-

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tion registered against the requirement that multipackages of bar soap must bear both count and net weight of each bar as a proper net quantity of contents marking. The hearing is scheduled to start on June 30 and I hope there will be sufficient time and interest for the organizations represented here today to take a stand on this issue.

The example of count on packaged bar soap serves to illustrate the contents of the FTC publication of May 30, 1969 which is Section 503.4 under policy statements. In addition it appears as Bulletin #3 of the Interpretative Bulletin system which we initiated earlier this year. In short, this publication states that the Commission wished to clarify the requirements of Section 500.6 and 500.7 to reflect that when a consumer commodity was properly measured in terms of count these regulations were interpreted not to require the declaration of the net content of a single packaged unit as "one" provided the statement of identity clearly expresses the fact that only one unit is contained in the package. This is exemplified by a packaged and identified soap dish which does not need to show, in addition, a net quantity statement of "1 soap dish." However, if, for instance, bar soap is ultimately required to be quantified by count *and* net weight, the package on the single bar of soap would only need to show the net weight but not the count.

On June 4, 1969 another very important statement by the Commission appeared in the *Federal Register*. As you recall, on June 15, 1968 the Commission published a long list of products which they proclaimed were consumer commodities under the FPLA. Although this was a policy statement, not subject to our two stage rule-making procedure, some 30 to 35 separate organizations and industries petitioned the Commission to reconsider the statement. This gave rise to a hard review of the total concept of "all other consumer commodities" as assigned to the Commission by Congress under the FPLA. The June 4 notice reiterated the previous declaration and stated that the Commission was of the opinion that modification or revision of that statement was not warranted.

Following closely on the heels of that statement, the Commission has submitted for publication, this very date, an expanded list which now includes cameras, cigarette lighters, furniture, musical instruments, wearing apparel and accessories including footwear, Christmas decorations, cordage, garden tools, handicraft and sewing thread, light bulbs, pressure sensitive tapes, school supplies, camera supplies, chinaware, glasses and glassware, hand tools, hardware, household cooking utensils, jewelry, compacts and mirrors, pictures, paintings and wall plaques, plastic flowers and parts, sewing accessories, silverware, stainless steelware and pewterware, sporting goods and woodenware. This is by no means an all inclusive list but, in keeping with the announced policy of the Commission, it answers submitted questions concerning specific products.

In addition, today's *Federal Register* not only contains the expanded list of commodities but there are four other accompanying matters touching on two major subjects. The first subject concerns exemptions and the second relates to a clear demarcation between packaged or labeled commodities and unlabeled commodities.

I would like to first bring you up-to-date on exemptions. The June 15, 1968 publication simultaneously announced the included commodities and listed some 11 proposed exemptions including both partial and complete exemption under Part 500 of the regulations. Of these 11 exemptions, eight were republished as final with an effective date of July 15, 1969. Plant foods and fertilizers were deleted and are now required to be labeled according to the regulations. Brooms and mops were also deleted since the issuance of Bulletin #3 makes the principle of that exemption now applicable to all commodities. On June 4, 1969 there was a new proposed partial exemption again published for the remaining subject wools, textiles and furs. The previous proposal was ordered to be deleted. The Commission felt that the comments received to the old proposal reflected many inadequacies to the extent that a renewed effort was indicated. The new proposal prescribes many specific methods of expressing net quantity by measurement for individually named products, but remember, these are exemptions with substitute ways to disclose "how many or how much" is in the package. When the specific textile or wool product is not named it should be quantified under the general requirements of Part 500 except, of course, for the general exemption concerning name and place of business when the products come under the Textile or Wool Identification Acts.

If you recall, motor oil and antifreeze were the subjects of a proposed partial exemption concerning dual declaration of net quantity on quart containers. This has been published as final but in the June 4, 1969 publication there is an additional proposed exemption to permit SAE and detergency to be placed on the lid rather than the principal display panel, which usually is on the can body. This will facilitate multiple use of can bodies, eliminating the need otherwise for large can inventories. It has been specified that the minimum size of letters on the lid will be ¼ inch for the quart can and ½ inch for the gallon can.

Other newly proposed exemptions are included in both the publication of May 27, 1969 and today's. In the May 27 publication there is a total exemption proposed for small arms ammunition. Also there is one extending for only a year for paints packaged in aerosol containers. This permits the industry to mark net quantity in terms of both net weight and liquid volume. Part of the aerosol paint industry proposed this to permit time for study of the dual marking system. It appears to be an excellent self-effort of industry policing and one that we all should make an effort toward perfecting. In today's *Federal Register* there are 6 new proposals for full exemption under Part 500. These

include cameras and camera replacement parts, luggage, automotive accessories, furniture, musical instruments and cigarette lighters.

Turning to the second major area of coverage in today's publication there are two matters which bear on the subject of packaged or labeled consumer commodities. Initially, there is a proposed amendment to Section 500.3 to change the words "each consumer commodity" to read "each packaged or labeled consumer commodity." Interpretative Bulletin #4 discusses the very fine line between the labeled and unlabeled product. The Commission has recognized an area of possible confusion in applying Section 500.2(e) where the manufacturer makes a practice of imprinting, engraving, embossing, molding or by some other similar process putting his name, trademark or other identity into the product itself. The question arose, whether this constituted the start of labeling requiring complete compliance with the FPLA regulations concerning labeled commodities. The Commission concluded that only the glued on label, a string or wire attached label or an otherwise affixed or attached label on the unpackaged and unlabeled commodity constitutes labeling requiring full compliance under the Act.

Finally, there are two other proposed amendments to the Part 500 regulations appearing in today's publication. The first proposes to amend Section 500.16 by adding the fraction "⅓" to those now available. In expressing lineal measurement this fraction is most important. The second amendment proposes to add Section 500.15.1 and is specifically designed to define proper quantification of container commodities such as bags, glasses, cups, freezer boxes and the like. Many industries producing these commodities brought to the attention of the Commission the fact that the regulations as written did not adequately provide for net quantity marking of these products so as to assist the consumer in making value comparisons.

There are three additional FPLA matters under active consideration at this moment—(1) proposed regulations to control use of "cents-off" representations, (2) a proposed bulletin to clarify the demarcation between an alternate principal display panel and the use of supplementary statements and (3) a group of requested extensions based upon a mixture of reasons. This last subject is now looming as the largest concern throughout industry but the Commission expressed in Interpretative Bulletin #2 its view that extensions will *only* be granted for reasons of the gravest nature such as strikes, acts of nature and similar situations. We will, as in the past, keep you fully informed regarding the Commission's decisions concerning all of these matters.

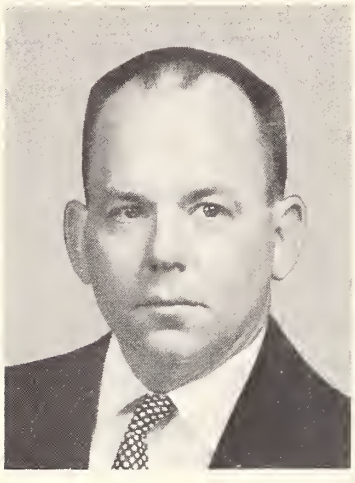
In addition to taking steps to start the hearing concerning net weight on soap, we are commencing a study of nonfunctional-slack-fill—that is, how much air there is in a package. We are commencing another study to determine the proper name and ingredient listing of a composite commodity and we are reviewing the definition of multi-unit

and multi-component packaging and labeling in conjunction with your Committee on Liaison.

In closing, I have endeavored, in this short time, to "brief you" on the efforts and progress of the FTC to further implement the FPLA. I would like to emphasize my final point by taking a cue from the State official who wrote to our Chairman and succinctly summarized our efforts. He said we should not be striving under this legislation for issuance of just more "Federal Regulations" or "State Regulations" but the issuance and administration of "National Regulations" which are uniformly applicable to deal with deceptive and misleading packaging and labeling practices. The Commission is charged with initiating proposed regulation for the purpose of implementation. These are premised upon their thoughts of proper coverage or upon reasonably grounded proposals of interested persons or groups all of which must be in keeping with the legislative intent of the Act. Each proposal must be made public in the *Federal Register* and we additionally send copies to anyone who has expressed an interest in following this legislation by being placed on our mailing list. Thus we arrive at the most important function as a "National" concern—the sixty-day period in which the record is opened for comment where everyone may take a part in the writing of these regulations. We urge you, ladies and gentlemen, to take a part in this effort. Do not confine your comments to changes or criticism but let us know when you are in agreement, as well. These comments need not be formal or more than a signed written note but they are most important to us. By your participation, you will help to create a truly "National" body of regulation providing the advantages of desired coverage, uniformity and valuable assistance to Federal and State agencies, the consumer and industry alike, thereby serving the public interest to best advantage.

ROLE OF THE U.S. DEPARTMENT OF AGRICULTURE LABELS FOR MEAT AND POULTRY PRODUCTS

by Dr. W. J. Minor, *Chief, Labels, Standards, and Packaging Branch, Technical Services Division, Consumer and Marketing Service, U.S. Department of Agriculture, Washington, D.C.*



The Federal Meat Inspection Act and the Poultry Products Inspection Act contain unique requirements to control the identification of consumer products they affect. These laws provide the Secretary of Agriculture with the mandate for approving the formulas, methods of preparation, containers, and labels prior to processing of meat and poultry products. The Secretary is also required to station USDA inspectors in federally inspected establishments to give direct supervision to the preparation of the products, their packaging, and the application of labels.

Product and label approvals are also required for imported meat and poultry commodities. Specially trained inspectors are in a continuous travel status reviewing the operation of the overseas plants that are approved to prepare products for shipment to this country. They review the production techniques, the equipment, the facilities, and the inspectional procedures. These are required to be at least equal to the construction and hygiene standards applied in this country to packing plants. The products must meet all of the requirements that apply to the preparation and labeling of like commodities made in the United States. When the products are presented at ports for importation, inspectors review each shipment to make certain the commodities represented are proper in all respects—including their composition and labeling. Laboratory facilities are maintained to provide information on any point that cannot be otherwise ascertained by the inspectors.

Responsibility for administering the product and label control aspects of the Federal meat and poultry inspection programs has been delegated to the Labels, Standards and Packaging Branch of the Technical Services Division within the Consumer and Marketing Service. This branch has the responsibility of developing policies to apply in obtaining informative labeling and prohibiting the use of false or misleading labeling and for reviewing all products prior to production and all labels prior to their use. This branch is also responsible for disapproving labels that are not suitable for product identification purposes and for providing technical advice regarding product and labeling requirements to inspectors, meat packers, labeling manufacturers, and others with an interest in product identification.

The Labels, Standards and Packaging Branch is located in Washington. The labels for products subject to USDA meat and poultry inspection programs are submitted for approval purposes along with information covering the complete formula with each ingredient identified by common name and percentage amount, a detailed explanation of how the product is to be prepared, and a description of the container that will be used for distribution. This information is used in deciding if the labels accurately and informatively describe the products so that consumers can make selections of meat and poultry products in markets based on personal preferences and needs. The labels that are not sufficiently descriptive or which might be misleading or deceptive in any respects are denied approval.

The recently enacted Wholesome Meat Act and Wholesome Poultry Products Act have several requirements which affect the labeling programs for meat and poultry products. They provide clear legal authority for a number of label approval policies that have been applied previously by administrative directives. They leave no doubt that USDA is expected to review and approve all products and their containers and labels prior to distribution from the inspected plants or before importation is permitted. The new laws require that dietary foods be specifically identified and they provide for the labeling of irradiated products.

These laws also have the requirement that Federal meat and poultry inspection authorities consult with representatives of the United States Food and Drug Administration and the USDA Secretary's National Food Inspection Advisory Committee prior to the identification of standards for products. This is to avoid inconsistencies in requirements applied at the State and Federal levels of responsibility.

The Fair Packaging and Labeling Act has also affected the approval programs for products and labels conducted by the USDA in relation to poultry and meats. This law specifically exempts from its provisions meat and poultry products that are prepared and labeled under the inspectional programs of USDA. However, USDA officials have endorsed the objective of the law which is to insure that packages and their labels enable purchasers to obtain accurate information about the contents so that value comparisons can be arrived at with a minimum of effort and time. It has been decided that approval policies for meat and poultry products will be modified to include the provisions of the Fair Packaging and Labeling law. We have followed closely the developments of regulations based on this Act by the Food and Drug Administration and the Federal Trade Commission. Proposed amendments to the Federal meat and poultry regulations have been drafted and they largely resemble requirements promulgated by the Food and Drug Administration and the Federal Trade Commission. One change involves the display of net weight statements on labels in a specific

location with these statements declared on the basis of the total ounces as well as pounds and ounces when the products weigh between 1 and 4 pounds. The size of the label will dictate the prominence with which the net weight statement must be printed.

Another requirement consists of the display of the applicable ZIP code for the firm's name and address featured on labels. Serving suggestions will also be dealt with in the proposed regulation amendments. When the number of servings is declared, then it will be required that the size of each serving be stated.

Present plans are for the proposed amendments to appear as a notice of intention in the Federal Register within the next month or so. We do not anticipate that objections will be offered to these provisions since they have been discussed at length with consumers, their associations, industry members, and importers. Almost without exception, concurrence has been expressed with the content and coverage of the requirements.

ROLE OF INTERNAL REVENUE SERVICE

by R. O. JOLIN, *Chief, Basic Permit and Trade Practice Branch, Alcohol, Tobacco, and Firearms Division, Internal Revenue Service, Washington, D.C.*

The Federal Fair Packaging and Labeling Act, that became effective on July 1, 1967, specifically exempts alcoholic beverages which are subject to or labeled in accordance with the Federal Alcoholic Administration Act.

The Model State Packaging and Labeling Regulation of 1968, designed to encourage the States to promulgate regulations to carry out the objectives of the Federal law at State levels, also exempts alcoholic beverages from the provisions of Sections 5 and 6 of the Model State Regulation where the quantity labeling of such products is specified in Federal law or regulations so as to follow reasonably sound principles of providing consumer information.

These exemptions are in recognition of the fact that alcoholic beverages are produced, bottled, and labeled under rigid controls—controls of long-standing and rarely, if ever, equalled with respect to other commodities in the United States.

Although, alcoholic beverages are not subject to the Federal Fair Packaging and Labeling Act (to the degree noted above), the Internal Revenue Service has embarked upon a program of revising regulations so that there will be substantial degree of conformity with the Fair Packaging law and regulations.

Our initial efforts have been with respect to distilled spirits. The

spirits labeling regulations now require that the brand label include a statement of net contents (except in the case of whiskey, brandy, rum, gin, and vodka, because they are packaged in standard bottles); a designation conforming to the prescribed standards of identity (or a statement of composition where the product has not been standardized); a statement of alcoholic content; and a requirement that all mandatory information be shown on a plane generally parallel to the base on which the container rests.

A hearing was also held on April 1, 1969, to consider certain additional proposals to amend the regulations; among which were a number touching upon labeling. If the labeling proposals should be adopted in the form considered, the brand label and any other label information on the same side of the container, would be defined as the principal display panel that is most likely to be displayed, presented, shown, or examined under normal conditions of display for retail sale. In the case of a cylindrical container, the principal display panel would be regarded as that covering not more than 40 percent of the circumference which is most likely to be displayed.

As the regulations relating to wines and malt beverages may, in the future, be noticed for hearing, they too will be considered for conforming amendment. Actually, however, any change in these regulations would not be likely to result in much change in labeling practices, since these products, for the most part, are now in substantial conformity with the Fair Packaging objectives. In that connection, it is interesting to note that some of the brewers have embarked upon a voluntary program of redesigning their labels so that the net contents statement will appear horizontally in the lower third of the brand panel, and so as to include the ZIP Code in their addresses.

The labeling of alcoholic beverages has, since 1935, been subject to the requirements of the Federal Alcohol Administration Act (27 U.S.C. 205(e)). Basically, that Act requires that such products be labeled so as to disclose to the consumer what is in the container, the quantity in the container and, except in the case of malt beverages, the alcoholic content of the product. The Act prohibits any reference to alcoholic content for malt beverages unless specifically required by the laws of the States into which such beverages are introduced.

Additionally, the Act prohibits statements that are deceptive, false, or misleading, as well as statements that are disparaging of competitive products or are obscene or indecent.

Regulations issued under this Act have prescribed standards of fill for all distilled spirits (imported or domestically bottled), except cordials, liqueurs and specialty products. They also prescribe standards of fill for all domestically bottled wines shipped in interstate commerce. These standards of fill prescribe the sizes of bottles which may be used for marketing.

In the case of distilled spirits, they are:

1 gallon	4/5 pint
1/2 gallon	1/2 pint
1 quart	1/8 pint
4/5 quart	1/10 pint
1 pint	1/16 pint—brandy only

In the case of wines, they are:

4.9 gallons	1 pint
3 gallons	4/5 pint
1 gallon	1/2 pint
4/5 gallon	2/5 pint
1/2 gallon	4 ounces
2/5 gallon	3 ounces
1 quart	2 ounces
4/5 quart	
15/16 quart—aperitif wines only	

Products may not be bottled and removed from the bottling premises, and imported bottled products may not be released from Customs custody, unless the labels have been approved as evidenced by certificates issued by the Alcohol, Tobacco and Firearms Division of the Internal Revenue Service. Violations of the labeling provisions of the Statute subject the violators to the criminal penalties prescribed by Section 7 of the Act or the revocation or suspension of permits as provided in Section 4 of the Act.

Because of these enforcement tools—and I refer particularly to the certificates of approval system and the vulnerability of basic permits held by bottlers and importers—very little difficulty is experienced in the area of compliance. Incidentally, in our consideration of labels for formulated mixtures of spirits or wines, or both, we base our determinations upon our review of approved formulas and statements of process.

Internal Revenue inspectors who are assigned to bottling plants, as well as those who regularly visit plants, have, as one of their responsibilities, the duty of seeing to it that these statutory and regulatory requirements are observed. In the case of imported products, Customs officers compare labels affixed to containers with those affixed to the certificates; if the labels agree, the products are released—if they do not, release is withheld.

Whenever standards may be tightened, bottlers and importers are afforded reasonable time within which to work-off existing label inventories. As new labels meeting these more stringent requirements are introduced, they too must be approved. Following such approval, the certificates relating to the superseded labels are surrendered for cancellation.

Our responsibilities, under the statute, are not confined to labeling. They are equally effective as to advertising. The rules on advertising are based upon similar statutory requirements. One complements the other. Thus, a bottler is precluded from stating in an advertisement that which he may not state on labels. We have no authority to approve advertising prior to publication or release. We do, however, survey representative newspaper and periodicals of general circulation to appraise the extent of industry-compliance. Again, because of our enforcement tools, mentioned above, compliance is pretty good. Our critiques of individual advertisements, for the most part, relate to routine situations. Whether the lack of compliance is routine or technical, or whether it is of more substantive proportions, corrective action is taken. Rarely, has it been found necessary to resort to proceedings against the permits involved.

Earlier, I alluded to the exemption in the Federal Fair Packaging and Labeling Act provided with respect to alcoholic beverages subject to or labeled in accordance with the Federal Alcohol Administration Act. Alcoholic beverages are subject not only to these specific labeling requirements but also to the labeling requirements imposed upon alcoholic beverage labeling by a great many of the States, under specific authority of State law. Generally speaking, these State labeling requirements complement the Federal alcoholic beverage labeling requirements. In some few respects, they may even be a little more stringent than the Federal requirements.

Although the existence of these State controls appears to have had no recognition in the Model State Packaging and Labeling Regulation, these controls are very much in force. Thus, to avoid confusion that may result from the overlapping of jurisdiction amongst State weights and measures authorities and alcoholic beverage control authorities in the same State, it would seem desirable to afford some recognition of this problem in the Model State Packaging and Labeling Regulation.

GENERAL PANEL DISCUSSION

QUESTION: What is the policy with regard to extensions for revised labels?

MR. GOMILLA: When the Fair Packaging and Labeling Act was passed, Congress set as its effective date July 1, 1967. Later they realized that the label manufacturers didn't have the facilities to complete the revisions by that date so they incorporated in the law a section which gave us an additional year. Therefore, it made the law effective for everybody July 1, 1968.

In an effort to allow firms to complete their revisions, the Commissioner set up a system whereby the firms could ask for, if they qualified, an additional year in which to complete these revisions. Extensions of time granted to 3,300 firms expire June 30, 1969.

QUESTION: Will you venture an estimate as to when proposed regulations will be forthcoming on Section 5 (Discretionary Provisions) of the Act?

MR. GOMILLA: As of today, there are no monies being devoted to the writing of Section 5 regulations. We have just set them aside. This could change because there is an upsurge of Congressional interest at this time and we could be writing these things tomorrow; but as of today, we're not.

We have done a considerable amount of groundwork on the cents off regulations, and if we do get the go ahead, we could possibly come out with this regulation in short order. I'm not begging the question—I just can't give you a more definite date than that.

MR. JOHNSON: As far as our date is concerned, you must realize that we must go through the procedure of finding either deception or a need for facilitating value comparisons before we enter into the proposal. We have been working on "cents off" for quite some time because we have this background, but it's still "in the mill" so I can't give you a prescribed date.

We have had to move on in these other areas, however, which you can well understand. We needed to clear the objections, we needed to clear the exemptions, and we needed to explain our commodity list where additional questions had been submitted to us. In the field of ingredient listing, we do have some background and we are progressing.

In the nonfunctional slack fill area, I believe this is going to be quite an extensive investigation that may lead to other fields beyond the commodity involved.

QUESTION: How long will current labels in inventory for meat and poultry be usable after the changes proposed become effective? Will this be on an individual plant basis?

DR. MINOR: These changes won't be a secret to anybody because we have been discussing them now for the last year and a half with industry members. For the most part, they have changed their labels in anticipation of these new amendments, but I would assume we will allow the usual 6 months on an industry-wide basis. That's normal for a situation of this type.

QUESTION: What percentage of water is allowable in a water added ham as stated, on the outer wrapper?

DR. MINOR: The product label of the ham can't have any more water in it than the raw meat had in it before it was processed. If it's labeled as "ham, water added," it can have up to 10 percent.

QUESTION: We understand that each agency is coming out with a manual—why not one manual instead of three?

MR. VADELUND: We heard very clearly earlier this week that the method by which weights and measures officials are getting regulatory

material through our office is insufficient, not in quantity but in organization and in ultimate use. The office will provide a manual, suitably indexed, for use both by weights and measures officials and by interested industry people.

Mr. Johnson: I first learned of the Conference's endeavor on this yesterday afternoon. We must get together in an effort to put it all in one place; however, we each have total responsibility within our own areas, and therefore, we are going to have to get some standard form to put this out in.

Our interest is in getting to you an annotated set of regulations, updated completely, to which you can add thereafter those final proposals that come out.

This we feel will service you, and you in turn can propose questions to us wherever they turn up.

Mr. Gomilla: We have been working on a manual. Let me put it this way. I have been working on a manual. Half of our staff is devoted to working on a manual. We have a staff of two people. I've spent five weeks working on this manual and I've got the information just about cataloged and ready for inclusion.

Food and Drug has no objection to being included in the one manual concept. We have one thing that we must abide by and that is our commitment to a group of regulatory officials that we will give them a manual, and that's what we're intending to do, but we have no objection to the one manual concept as such.

Question: How has the FPLA helped in the reduction in the number of can sizes found in the retail stores?

Mr. Vadelund: I can report to you that a can standard is currently in the mill. It is a revision of the long existing one.

Question: When a product deemed as proliferated eliminates certain sizes will all brands be limited to the exact same sizes?

Mr. Vadelund: This has to do with the voluntary standards for package quantity, and it is, as the name suggests, voluntary. It is anticipated that all brands of that particular product would voluntarily be limited to the same sizes. This is not to say that they will all make the same sizes, but they will make those sizes listed in the quantity pattern agreed to by that particular industry.

Question: How many men are assigned, full time to FPLA?

Mr. Johnson: We have five, counting myself, and hopefully, one coming in to us within a week. We also have eleven field offices to assist us, plus we are utilizing the Trial Section of the Bureau which of course has been fully acquainted in the past with deceptive practices.

Question: You announced that the fraction ⅓ may now be used—in the case of a 100 ft. roll, 33⅓ yards is okay. Can the fraction ⅔ be used on a 200 ft. roll, 66⅔ yards? 100 and 200 feet are two basic sizes used for wax paper and in our case plastic wrap.

Mr. Johnson: Yes, it's halves, quarters, and thirds, so one-third or two-thirds will be available in that change.

We have addressed that subject specifically in our proposal to the committee.

Question: Will FTC do active inspection for compliance (example: check weighing packages)? If so, will the guidelines be our Model Law and Handbook 67? If not, do you have plans for formal communications with State and local agencies?

Mr. Johnson: I feel very assured that these are the guidelines that we will go to and we will be asking for your assistance.

We can inspect at the present time, as you can inspect for us also the proper placement of these things on the package. But the accuracy of the weights in the package is of great concern at the present because we are not equipped at this moment for that job.

Question: Will you please clarify the effective date of regulations as it applies to labeled packages in distribution pipelines, warehousing, retailing, etc., and seasonally produced products?

Mr. Johnson: I'll first consider seasonally produced products such as Christmas package decorations and things of this nature. We granted one company, upon their request, an exemption from the July date to a November date. This company was packaging seasonally, and had ordered their packages prior to last January and packaged for the solid year, November to November, for next Christmas. We felt that it was ill advised to require them at the tail end of their season to change over their packaging and have two sets of packages on the market.

As to the others, those packages that are in inventory of the manufacturer, the retailer, the distributor, and the wholesaler, will now be able to go out into the market. Therefore, we will have a transitional period following July 1, 1969.

Question: What are the chances of expanding the recently proposed aerosol paint dual declaration exemption so as to make the exemption applicable to all aerosol containers? Will industry have to proceed on a case-by-case basis?

Mr. Johnson: The big question is what are the possibilities of proving liquid volume in aerosol cans, and I think this is a problem for us to look into. I am convinced, and I think you can be convinced if you know the technology behind it. Liquid volume proves a very satisfactory factor for value consideration to the consumer, but the question is, can we prove it and make it accurate.

The aerosol paint industry is an interested party in developing this technology and that's why they came to us for a one year exemption. They will be contacting you people very soon on it.

Question: How many men are assigned, full time, to FPLA?

Mr. Gomilla: As I mentioned awhile ago, we had two people in Washington assigned to writing the regulations, answering corres-

pondence, liaison with other federal agencies, answering phone calls, giving speeches and what have you.

We do have a field force. We can utilize their talents in this area if we have to. We haven't utilized them to a great degree yet. I estimate that we will use about ten man-years of our field force in the Fair Packaging and Labeling Act.

QUESTION: How many exemptions has FDA granted? How many are pending?

MR. GOMILLA: When the regulations were published initially, there were several exemptions built in. These were exemptions that had been in existence before and they were not the subject of controversy, so they didn't follow a new set of rule making procedures. But since the implementation of the regulations, we have published exemptions for soft drinks, frozen desserts, milk products, wheat flour, eggs, butter, margarine, corn products, cheese and cheese product packages and chewing gum.

Those that are affected number eight—soft drinks, frozen desserts, milk products, wheat flour, eggs, butter, margarine and corn products.

Cheese products, the random business, is still in the state of a proposal. Chewing gum is also in the proposal stage.

The majority of these exemptions were granted because the grounds were reasonable and they were based largely on consumer recognition. In many areas, the products that were the subject of the exemption were well regulated by State and other federal agencies.

QUESTION: What are FDA requirements for multi-unit packages? Why were some containers exempt from the total quantity statement where the container held several individual labeled commodities?

MR. GOMILLA: Food and Drug has held for years that to qualify as a multi-unit retail package, the package has to consist of individual units, each of which can and is capable of being sold at retail, individually. When a question is raised that applies to a given situation, we have to decide on a case by case basis.

QUESTION: Will FDA and FTC staffs recommend that regulations relating to "multi-pack" units be brought into line with the Model State Regulations?

MR. GOMILLA: It's not so simple as just bringing them into line with the Model State Regulations. You heard yesterday, in the report of the Committee on Liaison with the National Government, that Mr. Lewis had submitted what amounts to a petition to the Food and Drug Administration asking that the regulations be changed in line with those of the Model Law.

We felt that it would be more proper, in this instance, to follow procedures that are in existence to handle such a situation and publish the request as a petition for all to see and for all to comment. Based on the feed-back that we get after publishing this petition, a decision will be made as to how this regulation will read.

We question the feasibility of altering the regulation to follow the Model on the basis of just one request. We thought that this should be put to a vote, so to speak. We thought that people should have an opportunity to state their grounds—to comment pro or con.

This, we feel, is the crux of the rulemaking procedure and we choose not to circumvent it.

QUESTION: Are any investigations underway concerning slack fill in candy bars?

MR. GOMILLA: We have a regulation under the Food, Drug and Cosmetic Act that says in part, "any food product which is in a container that is so made, formed or filled as to be misleading is misbranded." We have tried to enforce this section with a notable lack of success. As a matter of fact, we have lost every case.

We felt that with the advent of the Fair Packaging and Labeling Act and the provision in the discretionary regulations to write regulations to control nonfunctional slack fill that we might have another shot at this, and we will. We are being presented, by State people who are interested and concerned about the situation, with a lot of good examples to use that justify the writing of the regulations to prevent nonfunctional slack fill and a lot of them are candy. But I personally know of no investigations under way by the Food and Drug Administration in this area.

QUESTION: What is the test used to determine whether a commodity is labeled in liquid measure or weight? For example, syrup.

MR. GOMILLA: Being weights and measures people, you know that syrup is labeled differently in various geographies of the country. In some places it's labeled by weight, in some places it's labeled by volume, in some places it's labeled both ways.

Tradition and precedent, play a big role in a determination as to how a product is labeled. If a situation arises where there is consumer confusion resulting from the fact that a product is labeled in both ways, then the Commissioner has the authority to pick one, and we are trying to do this with respect to pickle relish.

QUESTION: I am told that FDA calls labeling of "8 slices" of cheese an identity label. How come? How about rolls, candy, bacon, hot dogs, etc.?

MR. GOMILLA: We don't consider "eight slices" as an identity statement. A statement of identity is something that is well established, and since this product is normally sold by weight it would have to bear a label with a proper declaration by net weight, satisfying all the requisites of the Fair Packaging and Labeling Act as to type size, and what have you.

If the manufacturer chooses to include a statement of count, he does so as an option in the case of this product. We only ask that it be accurate and that it be in no way misleading. There is no prohibition

in the regulations as to what size this declaration may be as far as type is concerned.

We felt that if a man was going to include a statement of count in this particular product, that we would not restrict the size of it. Now if it's misleading, that's something else. There are some products in which a count and a weight are not only necessary, they're required. For example, in a package of tea bags we feel that the consumer wants to know not only how much this product weighs totally but how many bags are included. In that case, both count and weight are required and both count and weight have to be in the lower 30 percent of the display panel.

QUESTION: Please explain "the secondary display panel" as it pertains to labeling requirements under FPLA?

MR. GOMILLA: We find that with any new law and the regulations, you wind up with many terms. We have tried to limit the number of terms, so rather than call this thing a secondary display panel, I would rather refer to it as an alternate principal display panel. And if a manufacturer designs a product or has a product designed so that one face of this package is most often displayed to the retail purchaser, that would be the principal display panel.

If he goes one step farther and designs a package so that there is an alternate panel, that is also sometimes on display, then the alternate principal display panel has to comply with the law.

It has to have two principal pieces of information on it, the statement of identity and the declaration of content. Suppose a company puts the statement of identity on a third panel just to fill in a void. Does he also have to have the quantity of contents declaration there?

Not necessarily, but again, we would have to make such a determination on a case by case basis.

QUESTION: Why did you put booze under the Model State Regulation and denatured spirits under FPLA, or is this no longer true?

MR. JOLIN: Booze is not under the Model State Regulation, nor is it under FPLA. Denatured spirits are under both, as far as I'm concerned. Incidentally, denatured spirits would be subject to the labeling requirements of the Food and Drug Administration or the Federal Trade Commission, as the case may be, depending upon the type of the spirits.

Antifreeze would certainly be under FTC jurisdiction; mouth wash would come under FDA.

QUESTION: How can a local inspector justify his enforcement of a federal law if he removes from sale a commodity in violation of FPLA?

MR. VADELUND: He cannot justify it nor can he do it. As Mr. Gomilla mentioned, when the State passes its own law, or the local inspector's jurisdiction passes an ordinance, that is what he would be limited to enforcing.

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He cannot enforce a federal law, it is our purpose here of course as a Conference to come up with a Model Law and a Model Regulation suitable for adoption by State and local jurisdictions.

Closing Remarks

MR. VADELUND: I think the Conference should be pleased to learn, even after some lengthy time, that both the Federal Trade Commission and the Food and Drug Administration are responding to communications from this Conference, particularly in the multiunit packaging and labeling requirement area.

Perhaps they may not agree with us completely, but at least we've got them thinking about it.

WEDNESDAY AFTERNOON—JUNE 11, 1969
CONFERENCE LUNCHEON

Guest Speaker: VIRGINIA H. KNAUER, *Special Assistant to the President for Consumer Affairs*

I want to thank Dr. Astin, the Director of the National Bureau of Standards, for permitting me to have a "homecoming" so early in my tenure of federal office. I do feel at home here today with an audience composed primarily of State, county, and city officials and their wives. As you probably know, I have spent most of the past ten years as a State and local office holder. When I left office as Director of the Pennsylvania Bureau of Consumer Protection to take on my new duties, it was Dick Richards, one of your own, (and one of my close friends) who stepped in to pinch-hit for me as acting Director of the Pennsylvania Bureau. In the exercise of my State and local duties, I became intimately aware of and involved in the contribution you are continually making for the protection of the consumer and the honest businessman, against deceptively or fraudulently promoted goods. I have seen the excellent slide presentations Dick Richards gives showing how the Bureau of Weights and Measures in Pennsylvania is so efficiently run—and how his mobile units and highly sophisticated machines guard Pennsylvania's consumers against short weight whether it is fuel oil for their furnaces or the packaged meats for their tables. May I add this slide lecture is terrific public relations, if some of the rest of you State Bureau Chiefs have not thought of it. Dick is in constant demand as a speaker—the women's organizations lap it up—the fact that Dick is very handsome has nothing to do with his popularity!

In short, I feel that I can look upon your responsibilities and the difficulties facing you through your eyes and from your perspective. No matter how long my present term of office runs, I intend to retain this understanding of your responsibilities, accomplishments and problems.

There are other thanks I would like to extend to Dr. Astin. On the eve of Dr. Astin's birthday, and on the occasion of the last Conference under his Directorship, I would like to extend personal thanks and congratulations from President Nixon for 37 years of scientific and administrative excellence contributed by Dr. Astin to the programs of the National Bureau of Standards. To that I would like to add my own best wishes for the full and busy retirement which Dr. Astin embarks on at the end of this summer.

Three weeks ago I told the Association of Home Appliance Manufacturers' Annual Meeting that I would work during my time in federal office toward promoting greater cooperation and coordination between federal, State, county, and municipal agencies having similar consumer protection responsibilities. I am presently working with the National Association of Attorneys General to codify all State Consumer Protection laws and to encourage the formation of a Bureau of Consumer Protection similar to Pennsylvania's in all the 50 States and territories. There are only 33—some of which are strapped by staffing or nonexistent budgets. Last week I was with the Attorney General of Arkansas—promoting a Bureau of Consumer Protection within his office—and making a pitch for strong Consumer Protection laws—quite similar to those we passed unanimously in Pennsylvania.

I believe that a smoothly functioning relationship between State and federal consumer-protecting agencies is essential to the proper discharge of the State and the federal obligation to consumers. Coherency and uniformity of laws and regulations at the State and Federal levels provide a more stable environment for the ethical businessman who wants to comply with the law.

I know there are and will be problems in this relationship. I want to help with efforts directed towards alleviating these problems. I think that the proper place to start is in frank discussions.

The other day I came upon a recent article by Margaret Dana who is also on this Conference program. She made the point that as a result of enactment of the Fair Packaging and Labeling Act the responsibilities of your weights and measures officials have been enormously extended. No doubt in trying to keep abreast of the initial implementation of that Act your headaches have increased in proportion to your responsibilities.

As Margaret Dana stated, while Congress divided responsibility among the three federal agencies, it is still primarily the State weights and measures inspectors in the field who will do most of the checking to make sure the requirements of the law are being met. Therefore, any problems inherent in the Act or in its administration rapidly become your problems.

Both Houses of Congress will have reveiwed the substantive provisions of the Act and its administration before the year is out. In a review of the Act, the *New York Times* quoted the Senate Commerce Committee staff to the effect that the law "has borne meager fruit." Many popular publications have questioned the efficacy of the law in solving consumer problems. In hearings before a House Subcommittee last week, both the Act and the agencies responsible for the implementation of the law were faulted by witnesses and subcommittee members.

Some say that the Act was "oversold" in its title and in projections of what could be reasonably accomplished under the Act. Others point to a paucity of funds and personnel available to the task in the agencies especially during the crucial period between enactment of the law in November of 1966 and effective date of the law in July of 1967. Some publications have pointed to confusion at the State level caused by the division of responsibility among three federal agencies.

For my part, I am not yet ready to subscribe to any particular point of view as "the answer" to improving the Act.

I can see, as I told the House Subcommittee, that consumers still have difficulties making price comparisons when faced with a multiplicity of package sizes for the same commodity. In a recent foray into a local supermarket, members of my staff and I decided to test whether there were actually fewer sizes of packages of dry cereals on the shelves. This is what we found and reported to the House Subcommittee.

The figures released by the Department of Commerce in July of last year indicated that manufacturers, packers, and distributors of breakfast cereals had given firm commitments to reduce the number of packaged quantities of this commodity to 16 by December 31 of 1968. In addition to the 4 ounce, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 20, and 22 ounce packages which the Commerce Department indicated would comprise the 16, over last weekend my staff and I found 3 ounce, 4¾, 5¼, 7⅞, 9⅞, and 10.6 ounce packages of breakfast cereals which would add at least 6 more to the 16 listed by the Commerce Department. Some of the latter packages include multi-pack containers which unsophisticated consumers might automatically assume provide the same amount of cereal at the same price with the added convenience of individual serving containers. Some of the multi-pack containers prominently list the total net quantity of all the enclosed individual containers for convenient comparison with large size containers, but some do not, adding to the consumers' problem of making unit price comparisons.

The same December 31, 1968, date was listed by the Commerce Department as the commitment date for voluntarily fixing the packaged quantities of salad and cooking oils at 12 ounce, 16, 24, 32, 38, and 128 ounce sizes. On our shopping trip, my staff and I encountered at least 2 more different sizes.

Last month the Department made public a list indicating that the number of packaged quantities of dry detergents had been reduced from 24 to 6. However, my staff and I encountered 12 more different packaged quantities of dry detergents, bringing the total to 18 different quantities facing the consumer.

When I asked the Grocery Manufacturers Association for an explanation of why there seemed to be this continuing proliferation of

package sizes beyond the cut-off dates as announced by the Department of Commerce, they informed me that the voluntary compliance agreements their industry agreed to specifically permitted them to use up current stocks of packaging sizes to avoid serious losses—which would of course have boosted the price of cereals for consumers. This is evidence of a breakdown in communications—this logical answer, which did not receive proper publicity, would do much to calm the angry housewives who've complained to my office that the Fair Packaging and Labeling Act was a failure!

I can see that two and a half years after enactment we do not have all of the labeling requirements pertaining to net weight declaration, identity, address, etc., fully in effect as yet.

I am also aware that no regulations under section 5 of the Act pertaining to slack fill prohibition, cents-off labeling, size characterization standards and ingredient designations are in effect as yet.

Finally, I am aware of differences between State and federal regulations on the subject of what products should be required to comply with the provisions of the Act.

I think it is safe to say that we all have inherited some problems that need solutions. We can sit here litanizing these problems endlessly or we can take an aggressive approach by reaching some fundamental agreements on how these problems can be solved.

The President has directed our office to undertake a review of the 400 consumer oriented programs now in federal agencies and advise him and the Congress on how these programs can be strengthened and made more responsive to meet consumer problems. I will need your help and advice as well as that of the federal agencies involved. If I can have the benefit of your advice, I will do my best to catalyze the best that is in all the affected interests towards the solution of these problems.

To improve cooperation and coordination between State and federal consumer-protecting agencies, we will all have to do more to spotlight the expertise and accomplishments of the State and local departments. This fact was driven home for me during last week's House hearings. A member of my staff made the point that, if the right sort of relationship exists between State and federal agencies, a lion's-share of the enforcement of the Fair Packaging and Labeling Act will be provided by State and local inspectors. On completing my testimony several reporters were anxious to know just who these State and local inspectors were. Apparently these same reporters would be equally surprised to learn that expert committees of State officials were instrumental in the development of the initial regulations promulgated by the Food and Drug Administration and the Federal Trade Commission under the Act, and that State officials have also contributed mightily to the investigation of package proliferation.

Believe me, if I accomplish nothing else here, I intend to do something about that information gap.

Thank you for inviting me and giving me the opportunity to meet old friends again. Much remains to be done for the consumers. Your responsibilities will increase as well as mine in the days ahead as consumers demand more laws and regulations in their never ending battle to protect themselves in the marketplace and to exercise their four "consumer rights"—the right to be safe—the right to choose—the right to be fully informed—the right to be heard.

MORNING SESSION—THURSDAY, JUNE 12, 1969

(W. C. Hughes, *Vice Chairman*, Presiding)

WEIGHTS AND MEASURES—WHAT'S THAT?

by Mrs. Margaret Dana, *Professional Consultant, Consumer Relations Counsel*

Mr. Chairman, guests, and my friends in the weights and measures arena "where the action is"—it is a great satisfaction to me to have an opportunity again to speak to you first hand, to thank you for another year of great work in the national interest, and to needle you into an even greater effort in the coming year.

It was Mac Jensen who suggested the title for this talk, after hearing me report so repeatedly that consumers simply don't understand what the weights and measures segment of government does for them. This is a fact. But I am increasingly impressed, as I study over the years the changing attitudes and problems of consumers, with the vital importance to our entire economic and social system of our weights and measures. As I listen each month to the thousands of consumer voices which come in to me from every part of the country, I realize that we have here a tool that could be effectively used to create trust and good will and better understanding between the partners in this economic system of ours—producers, sellers, government and consumers. The effect of trustworthy weights and measures in any community is very much akin to the ancient use of the handshake between strangers to indicate no weapons, no enmity, only friendliness.

In a curiously similar way our weights and measures are a bridge of communication, of civilized understanding, and a basis for one of the most vital parts of our economic system—buying and selling. Without both standards and effective supervision of weights and measures, the consumer would "spend" instead of "buy." I once looked up the old, old roots of those two words and found that their true meanings are very different. According to the old roots, to "buy" meant to "exchange one thing for another of equal value;" to "spend" meant to "pour out without thought of return." Your jobs help to keep consumers able to buy instead of being forced to *spend*.

The important thought I would like to leave with all of you is that not enough consumers understand how our weights and measures standards work, how they are maintained, and how you work to check the fair and accurate use of these standards. In addition, as we move

rapidly now toward the implementation of the Fair Packaging and Labeling Act, at the grass roots level, consumers need urgently to know what you do, what you watch, and how they can cooperate for greatest community effectiveness.

The fact that so many people do not know what you do, or how honest weight and measure is continually protected, or how the citizens of any community should make sure of having enough inspection for safety and certainty, is serious. Not enough attention has been given to this factor as a subtle but real cause of rising unrest, ill will, and demand for legislation and government control of products. Neighborhood violence, especially where there is too little education, information and money, often is sparked by feelings of being "cheated" in their food stores. Yet as I read the letters from people in neighborhoods like this, I realize that many of their complaints could be met with simple information and explanation. The plain fact is that too many people don't know where to get information, or whom to ask to check on a matter that seems suspicious to them.

Curiously enough, many similar angry letters come from people with higher education and incomes—doctors, lawyers, teachers, etc.—who have listened to the Ralph Naders of the era and believe they are being deliberately cheated every time they buy a package of food, or a ladder or nails at the hardware store. Sometimes they are; but, as I study each case I find more often that misunderstanding or bad information is really to blame for the supposed cheating.

I could bring you many illustrations of the misinformation or lack of information that creates consumer problems. But in the brief time we have, let me select two or three which are perhaps especially surprising to you.

First is the strange fact that even after a number of years of the use of the automatic scale which delivers the label, net weight and price, for each food purchase, especially meat, people still do not understand this label. I find it hard to convince the scale manufacturers of this and I suspect many of you weights and measures people will find it hard to believe. But it is a fact. About two years ago the first consumer letters began to come in to me asking me to explain the labels which they enclosed. Some of these labels still carried at the top the two headings, "pounds" and "ounces," but the net weight was expressed in decimals, pounds and hundreths of a pound.

Since then there has been a rising avalanche of letters arguing that my explanation about the ounces involved cannot possibly be right. I used as an example one reader's letter in which she asked what "2.40 pounds" meant. She said she knew she had bought more than 2 pounds four ounces. The decimal point made no impact on her at all. But apparently, *men* are also confused. A letter recently from a man signing himself "Professional Engineer" took a page in an attempt to prove

me wrong, and wound up by saying angrily, "What is this, the new math?"

A lady in New York State wrote asking if she had been cheated, because on the duck she had bought were two labels, one said net weight 4.25 lb and the one underneath said 4 lbs. 4 ounces. Another reader in South Carolina sent me a small glass perfume bottle and a label. "Something must be wrong," she said—she felt she had been cheated. The bottle is labeled, she said, "5 fluid ounces," but on measuring the content she found it held exactly one tablespoon. But when I looked at her label, I found it said 0.5 ounces. Again, the decimal point had not registered in her mind.

Even more curious was the letter from a Chicago man who said I should warn people about the new electronic scales, they weigh gross weight, not net weight, and the package or tray is included in the weighing. Some thousands of letters have reported similar beliefs and nobody has taken time at the store or anywhere else to tell them where and how they are wrong. I try, but I can't talk weights and measures in *every* column.

A letter from a woman who is herself a clerk in a food store put it quite bluntly. She says that most customers have simply no understanding of how the automatic meat scales work, and how the weight is stated. They read "1.45 pounds" as 1 pound, 4½ ounces and are always sure they are required to pay too much for what they get. Complain? Sometimes, but usually they are hurried, or the irritation just festers and breaks out in demand for restrictive legislation.

I believe we need a broad program of education on this situation, and I have asked some of our scale manufacturers if they would consider the idea of providing a small, simple leaflet, explaining in clear terms what the decimal weight statement means. Wall posters, such as were used when the scales were first introduced, help, but not much. The atmosphere of a crowded or hurried store, with poor lighting for reading, is no place to read, think, and understand this kind of explanation. There are many other subjects which come up, needing good answers in each locality. Milk containers which customers feel are not fully filled is a constant source of question. Powdered dry milk packages which fail to make the number of quarts of liquid milk the label claims, create another mass of complaints. Electricity meters, gasoline gauges, ladders that fall short, literally, of labeled lengths, short count in paper napkins, spray cans that cheat in giving up their contents—all these are local irritants. People ask me how to reach the right person to ask about these things, and I usually say *you* are the right persons.

But one recent flood of mail was triggered by a letter from George Mattimoe of Hawaii's Weights and Measures Department. His thoughts on the labeling of net weight-versus net *drained* weight, of abalone, coincided with a surprising batch of letters from readers com-

plaining about the "net weight," not being a fair statement of what the can contained. Mr. Mattimoe's very lucid analysis of this problem, citing examples of abalone in cans labeled one pound, but giving only 8 ounces of food, and 8 ounces of salt water, was quoted in my column. I asked for opinions and experiences, and I got them, hundreds and hundreds of them. I have a feeling that if George Mattimoe wants to run for president any time, the women of this country will rise up and vote him in. They liked what he said.

Because so many women mentioned in their letters a similarity between abalone and clams, and their processing and use, I bought two cans of minced clams, of different brands, but the same size by net weight. Each was marked net weight 7½ ounces. Each was priced at 35 cents. The *drained* net weight of each, exclusive of the can, was 3¾ ounces. The salt water may have nutritive elements, but it would seem only fair to let buyers know what proportion of the net weight was the solid food. This is not by any means considered fraud by most people writing me, but simply a lack of a dependable guide for their choice in buying. Here is an area where our weights and measures people can perhaps help consumers greatly, by urging a change in labeling which would provide the net *drained* weight of contents, as well as the required net weight. So simple a change could disperse much ill will building up at our grass roots.

There are many letters in another group, discussing the placement of scales in stores, for clear view by customers, or for use by customers in checking weights and measures. I am often asked, "Do consumers have a right to see the scales themselves when weighing is done? Or do we have the right to have scales available for our own use when we want to check weights?" You would also perhaps be amazed at the number of people all over the country who are convinced that today's automatic scales give gross weight not net weight on the package labels. Again, others write to say they "know" the clerks are told to "make their wages on the scales, by overcharging a little here and there."

There are many more kinds of inquiries, complaints and problems brought to me, but the point I hope to make about all these, is simply that we need urgently, better local communications between consumers, their stores, and the weights and measures inspector or department. Last year I asked the members of this Conference to study how their name or office could be simplified and coordinated all across the country, so that consumers could be told clearly how to reach an inspector when they felt they had a valid complaint or inquiry. Since then a number of you have been kind enough to let me know how your office, local, county or state, is listed in the phone book.

In some instances the words "weights and measures" is listed, directly below the government department under which it operates. But

few consumers, unless they are experienced in looking up government bureaus or departments would know they should look first for "San Mateo—County of" or "St. Louis—City of," and so on. They ask, "How do I know whether to hunt under the county name, the city name, or some other name?"

Then there are the almost infinite variations in titles and department names. I find these for instance: "Inspector of Weights and Measures; Dept. of Inspection and Permits; Weights and Measures—Bureau of; Weights and Measures—Sealer of;" etc. And under state headings I find "Dept. of Labor; Consumer Protection Division; Division of Standards; Agricultural Dept.; Agricultural Board; Office of Secretary of Agriculture;" or just plain "Agriculture," with no subheading indicating weights and measures.

As one of your members has suggested to me, weights and measures should always be in the "W's" in every phone book and an explanation of how and when to call them would then make national sense. Every phone book in the country should have such a listing. Yes, I know, it costs money and weights and measures budgets are always too small, but if your taxpayers fully understood what you *do*, and the urgent need for this two-way bridge, I believe phone book listings would be built into community budgets.

It is now, as we are approaching one of he biggest steps forward in our national history—implementing the Fair Packaging and Labeling Law—that I believe we need a concerted drive to make our weights and measures activity understood, and to invite the informed cooperation of consumers everywhere. I would like to see our local and State weights and measures people taking the lead in planning local seminars for consumers, stores and inspectors, to get across the meaning of its provisions and how it works out locally. Such grass roots round-table discussions could provide the information consumers badly need, and answer their questions or complaints in a spirit of informal, mutual friendliness. There do not have to be battles and boycotts and windows broken because of ill will toward our sellers, or toward the products they sell. I am convinced that our weights and measures people representing that old respected gesture of trust between buyer and seller, could have a very real impact on community peace and quiet.

I hope you will all think about this idea, and count on me to help push it if you decide to try the experiment.

Finally, let me leave with you two thoughts about what may be future extensions of your work. One has to do with noise pollution control. Recently I have been studying numerous important research reports on what noise is doing to all of us, and how we shall have to set standards of allowable decibels, and these will have to be measured

and checked locally by somebody. Guess who the experts suggest should take on this duty? Of course, our weights and measures experts.

The second new area may please you better. At a meeting last fall of the Apparel Research Foundation, much was made of the rising flood of complaints from consumers, especially women, about sizes being unstandardized, dresses not fitting right, and their labeling being generally misleading. They want a size 14 to be a size 14 always. A research man suggested lightly, "Why not turn this job over to the weights and measures inspectors in the field? Let them try the dresses on women to see if they are correctly sized and measure them for overage and underage."

For some reason the inspectors I've talked to didn't seem to mind this possible extension of their duties.

Thanks—and my good wishes to you.

NATIONAL ASSOCIATION OF STATE DEPARTMENTS OF AGRICULTURE

by M. B. Rowe, *Commissioner, Virginia Department of Agriculture and Commerce*

As a member of the National Association of State Departments of Agriculture—and as a representative of agriculture—I am delighted to be present and participate in this 54th National Conference on Weights and Measures sponsored by the National Bureau of Standards. This occasion provides a splendid opportunity for us to share information and thereby improve communications between your organization and NASDA.

Last Sunday, I had the distinct pleasure of speaking to State officials from all over the country belonging to the Weights and Measures Division of NASDA. Since its formation 6 years ago, this fine organization has made real progress toward attaining its objectives of improved administration for weights and measures laws and regulations.

The discussions of the many, varied, and complex questions related to weights and measures that take place in this national forum each year make this body one of the nation's most important organizations of its type. Your work in coordinating and promoting uniform enforcement for the activities of Federal, State, County, and Municipal weights and measures agencies—and the educational services you are performing for these groups, as well as for manufacturers and consumers—is a fine service that deserves recognition.

The administration of weights and measures is a basic consumer service that constitutes one of the most responsible functions government provides for citizens. Today, more than ever before, consumers are bewildered by the proliferation and complexity of the products of our growing technology that they are becoming increasingly dependent upon. They critically need reliable standards of all types in order to make wise judgments when buying products in the marketplace. Clearly defined, sensible and uniform standards for weights and measures are proving almost indispensable to both producers and consumers in today's complex marketing system.

Certainly, the trend to consumerism is growing so rapidly that all types of public service agencies should make plans now to handle these mushrooming demands. In Virginia, a rapidly growing State with a population growth rate well above the national average, the demand for both trade and consumer services has increased sharply in recent years.

The Virginia Department of Agriculture and Commerce provides more direct consumer services for the State's citizens than any other single agency of State government. A breakdown of our operating expenses for the 1967–68 fiscal year shows that 36 percent—or over one out of every three dollars expended for operating costs—goes for services intended to benefit all of the State's consumers, or citizens.

The department's services embrace the entire range of producer, marketing, and consumer work. They include food inspection, marketing services, and a wide range of regulatory services which of course takes in weights and measures. Because of their greatly diversified nature, we have defined these functions as "citizen service programs"—a special terminology which applies to *all* people.

In spite of well planned public relations effort, few Virginia citizens really know the specific nature of these services, who performs them, or how to register a complaint. For example, one of our well known Virginia papers recently carried an inquiry in its "question box" section from an individual who was in a quandry. It seems that this person, *after having read about the availability of weights and measures services*, was unable to locate this function in the telephone book. Of course, the answer given was that these services were listed under various and somewhat unrelated headings, as they were performed by a wide range of agencies including the State department of agriculture as well as by federal, county, and municipal groups.

As problems of this type are undoubedly widespread, we in Virginia are planning within the near future to correlate all of our consumer services under a single director of consumer affairs. This individual will provide a central office and contact point for officials of both government and the public in general on matters of consumer interest. We believe that this type of structuring will further our

ultimate goal of better public service with respect to either availability or the handling of complaints in areas where we have specific responsibility. One of the department's foremost aims is full utilization of our services by an informed public.

One of the most significant and important consumer measures passed by Congress in recent years is the Fair Packaging and Labeling Act of 1966. The basic purpose of this act is, as you know, to eliminate some of the confusion presently confronting consumers in the marketplace. We in NASDA have been very interested in the great possibilities this act offers, provided its provisions can be standardized and tailored to fit the best interests of manufacturers, consumers, and enforcement agencies.

You will no doubt be interested to knowthat NASDA is very concerned regarding the progress of FPLA legislation, the provisions of which are currently under review by Congress to determine the need for possible revisions or additions. News releases indicate that the Senate Commerce Committee will examine the act for inherent weaknesses and try to determine whether agencies responsible for its administration have performed as well as could be expected under the circumstances. All interested groups should naturally voice their opinions on this act as soon as possible.

As chairman of the NASDA committee on Marketing, Transportation, and Weights and Measures, I recently appointed a sub-committee comprised of six members to study the act and recommend changes that will provide for a more meaningful Federal-State cooperative program. We have been offered the full cooperation of the director for Producer Marketing Relations, President's Committee on Consumer Interests, and other representatives of federal agencies.

Another important step toward the attainment of overall uniformity is being carried out under the provisions of the New State Standards Program administered by NBS. This program, under which 30 States have already received their standards, with 10 more States selected, unquestionably offers State officials a great opportunity. I hope that the remaining States that have not yet qualified will also lend their support to this worthy effort. We in Virginia will soon have a new consolidated laboratory building, and expect to begin full participation under the act by the middle of next year.

In view of the excellent progress being made by the State standards program, increasing emphasis should also be exerted to get State model laws in line with FPLA provisions. Full coordination will be needed in order to achieve the ultimate benefits of uniformity.

We in NASDA stand ready to help you achieve your aims and objectives in any way possible. Participation in this conference has given me a new insight into your problems—as well as your progress—that I am confident will enable us to work together more effectively.

THE COMING TRENDS IN PRODUCE MERCHANDISING

by R. B. Crosset, *President, Crosset Produce Company, Cincinnati, Ohio*

Let me familiarize you with the company I represent and the industry we are dealing with. My company, a produce wholesaler and packager, though small by comparison with other industries, conducts a substantial amount of business in our marketing area—namely Southern Ohio, Northern Kentucky, Eastern Indiana, and the western part of West Virginia. We employ approximately 135 people and throughout the year, sell, prepackage, and process approximately the equivalent of 4,000 carloads of fresh fruit and vegetables. Since we deal *only* in fresh fruits and vegetables we handle most of the varieties and commodities on the market. We also do a substantial amount of prepackaging and presently, we are venturing into a new concept in packaging. I shall return to this subject later.

Contrary to belief, our business is not conducted as many people think, i.e. the old market place with buyer going from one commission house to the other looking for the "cheapest price." This type of trading still takes place, but it is rapidly becoming "passe." Instead, the highly competitive nature of our business, has helped us develop a highly sophisticated business, that is fast becoming very modernized and progressive. We are dealing with a highly perishable product requiring constant attention and competing with frozen and canned products, that can almost always be sold at a lower price.

The fresh business is important to the retailer as far as his profit structure is concerned. Properly operated, this department contributes far more than its net share of the profits. Chain stores generally operate at a 1½ percent of sales of net profit. Though produce only amounts to 1½ percent to 8 percent of the total sales, according to a recent survey, it accounts for almost 25 percent of the net profit of the operation. This alone helps show us the contributing value of excellent fresh produce at the store level.

As I stated earlier, our business is a highly competitive one, and the mortality rate is quite high. Six years ago in Cincinnati, there were over 45 companies engaged in the wholesale distribution of fresh fruits and vegetables; 2 years ago—32; and just a month ago, there remained only 24. This naturally means that we must be extremely efficient if we are to succeed in our business. I might point out that a Federal survey two years ago showed that the *average* profit in the produce

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business was 65¢ for every $100.00 in sales—before taxes. Very few industries work on margins so close, particularly with a product which is highly perishable.

Transportation of produce is handled almost equally by both railroads and trucks, with a negligible percentage handled by air. This percentage will change, in my opinion, with the railroads picking up the increase. This is because of the development of larger rail cars, hauling cargos, resulting in lower freight rates per package, and the combined increase in the cost of trucking. At the moment however, the railroads, particularly the Eastern roads, are penalizing themselves by their inabality to give good service.

At the retail level, we consider fresh fruits and vegetables as "impulse" items. That is, one which is purchased by the consumer because it has been attractively presented to her, displaying freshness, crispness, and color. This is accomplished by extensive care from the time the crop is planted, harvested, transported, distributed, and finally displayed at the retail level. I am primarily concerned with the distribution, packaging, and proper preparation for retail display. Weights and measures inspectors are concerned that the consumer and the wholesaler receive what they think they are buying in terms of quantity, as spelled out in the various regulations. Sometimes this becomes difficult because we have both State and Federal regulations, and conflicts exist. Probably 50% of all fruits and vegetables are shipped from four primary States: Florida, California, Arizona and Texas—and it is literally impossible for shippers in these areas to conform to all the State regulations in all States. Many times, these laws actually work against the consumer in a State.

For example, in the State of Ohio from where I come, the State law accepts primarily the "Federal Standard Container Act" as its guide line. Let's give an example therefore of conflict. Most western shippers now use a carton to ship peppers in, that is marked with the shipper's name and address, the grade, the net weight, and likewise is marked 1 bushel equivalent. However, it is not the "standard" container and therefore is in violation of the Ohio law—so the package is an illegal one. The carton was developed because it is a far better package for transporting than the bushel, the product arrives at market showing far less bruising of the commodity, therefore delivering more saleable product to the consumer, therefore making the retail cost to the consumer lower. Likewise, the carton is much more adaptable to palletization which is a must in our industry due to the high cost of labor. Palletization eliminates much handling of product, and the smaller number of times a product is handled, the smaller amount of damage will be done. Obsolescence has encircled a number of acceptable standard containers and all States should study the various laws under which they operate in this area and make their laws flexible enough

to accept the various changes necessary, so that the consumer can receive the value of research and new innovations in marketing.

However, let me be quite clear—I'm not advocating leniency for those who intend to take advantage and cheat because this situation is not good for anyone, especially the legitimate dealer—and we, like many other industries, have those who will intentionally cheat, if given the opportunity. I might interject at this point, that we in Ohio have been studying our law and have prepared for our next State legislative session, a revised code which will provide flexibility, but will still provide enforcement where necessary.

Let's discuss briefly the term shrinkage, as it relates to weights and measures. This is very important in fresh fruits and vegetables because their water content is 85 percent or more. Therefore, with such a high water content, fruits and vegetables are extremely sensitive to weight loss. So, many times when packages at retail level are short in weight, the wholesaler or the packager takes the responsibility for the error. Let me give you an example, however, where the blame was placed on us unjustifiably. One of the leading food chains in our area was cited at the retail level for potatoes that were light weight. He immediately phoned his supervisor and reported that the potatoes were received the same morning. Our company was told that we had delivered short weight potatoes and the entire shipment would have to be replaced—which we did. When the short weight potatoes were brought back to our warehouse, I looked at them and knew immediately that we were the victims of a dishonest produce manager. The bags in question were of a tape-type draw string and we discontinued the use of them in favor of a stringdraw type. In checking our production records, we found that these potatoes had been packed five weeks prior to this date. The produce manager was just guilty of not properly rotating his produce rack. We actually put 8 ounces over the 10 pounds required in order to give the retailer sufficient time to sell the potatoes. This is not to say that the retailer is always guilty, because we can make mistakes also, but this clearly shows what mistakes can occur. There are wholesalers who try to skim by the weight tolerances, but they are becoming fewer and fewer because of the high cost of labor and close margin of profit; a rejected load due to short weight is tremendously expensive to reweigh and repack. In addition, you must understand that we are selling the same customer daily—sometimes two and three times in the same day. If we were to continually deliver short weight, or improperly graded merchandise, we would no longer have a customer.

At this point, I would like to refer back to our previous discussion of containers. Containers are not designed to be deceptive and fool the customer. You could only fool them once or twice, and after that they would leave you. None of us can afford to lose a repetitive customer.

These containers are designed to facilitate better loading, unloading, transport easier, make available palletized or slip sheet unloading, and finally to offer a greater variety of packages to the retailer, or customer. I repeat, law-makers should consider all of these things in studying and formulating regulations. Improper regulations only make the cost of operations higher. These costs, of course, are finally borne by the consumer.

Let me now discuss with you the coming trends in produce merchandising. As you all noted during your visits to the retail outlets, more and more produce is being wrapped, or trayed and wrapped. In most cases, this is done in the back room of the store and, in many cases, is done by people who really don't know a whole lot about produce, or the various regulations which govern the selling and labeling of produce. Though a chain store has set up standards for quality control and good merchandising, this planning is to no avail if the qualified personnel are not out at store level to properly wrap, trim, mark and display their produce. Therefore, if a chain group has 70 stores, they more than likely have 70 grades of quality.

Recently, centralized packing plants are being built to do all or most of this packaging at a centralized location. There are very few chain stores which can do this job, however, because only the largest ones can justify the investment, or maintain the volume which is absolutely necessary to operate such a plant profitably. And even if a giant chain can do this, what about the smaller ones who number from 5 to 50 stores in a given area. This is where I believe the future of the produce wholesaler is to be found.

We are presently involved in a pilot operation in this area and firmly believe in what the results have shown thus far. We are packaging some 40 items presently in a centralized plant, from bananas to zuchini squash and each package is pre-priced according to weight or count, depending on the retail program. This type of program offers many advantages for the retailer. It gives him consistent grade and quality at the store level because the same people, trained in packaging and trimming, do all the work with highly specialized equipment. Shrinkage losses are far less because trimmings are thrown out at wholesale level rather than at retail level. This means more time can be spent keeping the produce rack full, attractively packaged, rather than requiring the produce man to always be in the back room packaging.

The labor cost is far less when a job is done at a central plant, because mass production is much less expensive than individual store production. For example, in our plant, we are able to completely shuck and trim five ears of corn, place in a tray, shrink wrap, and pre-price the finished package in one woman-minute. We know that an operation like this cannot be done in the stores in the same time. Also, how many individuals can afford to have a Hobart 3000, or Toledo scale, repre-

senting $8,000-$9,000 investment for each store, or a U–6 machine costing $15,000 which wraps 30 packages a minute for each store. This would not be sound thinking because of individual cost. However, when a wholesaler can supply 5 or 6 chain groups with a total program, he can do an outstanding job at a minimal cost to each chain, or individual retailer, and the retailer may retain his individual identity because the pricing label can have each retailer's name on the price label. Finally, the cost of master containers can be practically eliminated by the use of returnable containers. Cardboard containers are expensive and seldom returned. They may represent as much as 7–10 percent of the total cost of the delivered product, and could make an operation such as this uneconomical. However, we are using a heavy wire basket, costing about $5.50 each, that is returnable, and nondestructive. This means that there is practically no master container cost because these containers are good for 300–400 trips. Amortization and interest cost of investment here, therefore, is minimal. I might also mention that these wire baskets likewise allow for complete circulation of refrigerated air helping to maintain a good product temperature. Also, and quite an important factor, these metal containers offer complete and total protection against bruising of the finished product which cardboard just cannot do.

Finally, may I close with just a few brief remarks about packaging legislation. We know that it is meant to protect the customer, whether he be the consumer or an intermediate wholesaler, and we likewise know that with good planning, it is meant to make marketing more orderly. It does, however, create problems and confusion and can be very costly to the consumer if it is not well thought out with all factions studied and considered. I would like to give an example of what I believe to be improperly proposed legislation because it represents some selfish interests. I refer to the National Potato Labeling Act which has been before Congress, but has not been passed as yet. This act states that all consumer packages must have the State of origin of the potatoes packaged on the bag itself. Now, in our case, we use vexar, polyethylene, and mesh bags. We pack 5, 10, 20, 25, and 50 pound units, and during the course of the year, pack potatoes from as many as 31 different States. Can you imagine the inventory of packaging materials that we would have to maintain to comply with this law—a cost which would just have to be passed on to the consumer. This law has been proposed to help one State protect the name of their potato which they have spent thousands of dollars promoting. Some packagers have used their State name on their bags, but have not used their potatoes. This is definitely a matter of misbranding and enforcement can be handled under the Perishable Agricultural Commodities Act, because it is a direct violation of this act. Passing the National Potato Labeling Act will not stop a guy who is already cheating, but

certainly will jeopardize the position in the market of the law abiding packager. As a matter of fact, it would probably make many legitimate packers turn dishonest because they literally couldn't afford to operate honestly.

AFTERNOON SESSION—THURSDAY, JUNE 12, 1969

(W. C. Hughes, *Vice Chairman*, Presiding)

(Thursday's afternoon session was devoted to reports of the Conference committees.)

REPORTS OF THE CONFERENCE COMMITTEES

REPORT OF THE CONFERENCE EXECUTIVE COMMITTEE

Presented by S. H. Christie, *Chairman, Deputy State Superintendent, Division of Weights and Measures, Trenton, New Jersey*

(Tuesday, June 10, 1969)

The Executive Committee of the National Conference on Weights and Measures met in open session on Monday, June 9, 1969, at 8:30 a.m. Discussion was held on the following items:

1. *Plans for the 55th National Conference.*—The Executive Committee has proceeded with plans to hold the 55th National Conference in Salt Lake City, Utah, the week of July 12–17, 1970, with the Hotel Utah as host. The arrangements that have been made so far indicate that this will be an outstanding location. The Committee suggests that you make early plans as a large attendance is expected, and wish to remind those affected by fiscal financing to make the necessary arrangements.

2. *Program Details.*—The Committee heard discussion during its open meeting concerning the program details and arrangements for the Conference in 1970. It was the consensus that program meetings and events as scheduled for this year's Conference were to be continued. Accordingly, the Committee will recommend to the Executive Committee for the 55th National Conference that such plans and arrangements be followed.

3. *Associate Membership Committee—Amendments to the Organization and Procedure of the National Conference.*—Last year the Conference adopted a proposal made by the Executive Committee to amend the Organization and Procedure of the Conference to provide for the establishment of a new standing committee on associate member coordination. In conformance with section 10 of the Organization and Procedure, which reads, "Proposals for changes in organization or procedure of the Conference are not acted upon until the meeting of the Conference following the meeting at which such proposal is made," this matter is now eligible for Conference action.

During the ensuing year, this proposal has been given further consideration by the Executive Committee, and it was the subject of discussion during the open committee meeting on Monday. On the basis of such additional consideration, the Executive Committee wishes to acknowledge the desirability and support for the proposal to establish a committee of the associate membership. There has been, however, sound justification given to change the original proposal so as to have

this committee serve as an annual committee of the Conference rather than as a standing committee. Accordingly, the Executive Committee recommends that the Organization and Procedure be amended to provide for a new annual committee to be known as the Associate Membership Committee. I (the Chairman) therefore present this proposal in the form of a motion and move its adoption to become effectitve immediately by unanimous consent of the Conference:

(a) Amend section 5, Committees, paragraph entitled *Annual committees*, on page 6 of the Organization and Procedure, to read:

Annual committees.—The annual committees consist of the following: (1) A Nominating Committee of seven members, a Resolutions Committee of seven members, and an Auditing Committee of three members, all of whom are appointed by the Conference Chairman from the active membership. (2) An Associate Membership Committee consisting of not less than five nor more than ten members, appointed by the Chairman from the associate membership. This committee shall represent a cross section of interest within the associate membership. (3) An Executive Committee consisting of all officers, *ex officio*, past Chairmen of the Conference still active as regulatory officials, and ten members elected from the active membership. The President, Executive Secretary, and past Chairmen shall not have votes on matters before the Executive Committee.

The annual committees appointed by the Chairman serve during his term of office. The term of the Executive Committee runs from the adjournment of the meeting at which its members are elected through the succeeding meeting of the Conference.

(b) Amend section 6, Duties of Officers, paragraph entitled *Chairman*, on page 7 of the Organization and Procedure, to read:

Chairman.—The Conference Chairman is the principal presiding officer at meetings of the Conference and of the Executive Committee, and makes appointments to the Nominating, Resolutions, Auditing, and Associate Membership Committees.

The Conference Chairman is authorized to order an executive session of the Conference at any time such a session is deemed by him to be in the best interest of the Conference.

(c) Amend section 7, Duties and Fields of Operation of Committees, by inserting a new paragraph on page 7 of the Organization and Procedure, following the paragraph headed *Auditing Committee:*

Associate Membership Committee.—The Associate Membership Committee annually reports on its activities and

recommendations to the Executive Committee. The Committee provides coordination and participation of associate members in all business and social affairs of the Conference.

4. *Metric Task Force.*—Discussion was heard during the open meeting on the establishment of a task force within the framework of the National Conference on Weights and Measures to work with the National Bureau of Standards on matters pertaining to the Bureau's study on the Metric System. This item will receive further attention by the Committee on Resolutions in its report to the Conference.

* * * * * * *

The Committee wishes to thank those delegates who attended the open meeting on Monday and expressed their opinions on various matters and items under discussion. On behalf of the Executive Committee, may I say that we hope your experience during this Conference is informative and enjoyable. It has been our pleasure to serve you.

S. H. Christie, *Chairman*
W. C. Hughes
J. F. Lyles
R. L. Sharp
C. B. Whigham
C. C. Morgan
R. W. Searles
L. A. Gredy
W. H. Naudain
M. H. Becker
F. D. Morgan
L. B. Frank
P. Grassi
J. C. Boyd
H. K. Sharp
J. A. Hughes
K. G. Hayden
H. F. Wollin, *Secretary*
Executive Committee

(On motion of the Committee Chairman, seconded from the floor, the Report of the Executive Committee was adopted by voice vote.)

MEETING OF THE INCOMING CONFERENCE EXECUTIVE COMMITTEE

Presiding Officer, R. W. Searles, *Conference Chairman, Sealer of Weights and Measures, Medina County, Ohio*

(Friday, June 11, 1969)

The Executive Committee held its breakfast meeting on Friday morning, June 11, for the purpose of considering plans for the 55th National Conference on Weights and Measures. A summary of matters that were discussed and those decisions that were reached follow:

1. The 55th National Conference will be held in Salt Lake City, Utah, at the Hotel Utah, the week of July 12–17, 1970.

2. The Executive Secretary was authorized to make the necessary arrangements with the Hotel Utah, including room rates, meeting rooms, social functions, and the like. A bus tour will be arranged with the Salt Lake Valley Convention and Visitors Bureau.

3. The program format will remain essentially the same as the 54th Conference. It was suggested to continue and to expand the open-forum concurrent sessions on the three broad subjects of weighing, measuring, and merchandising. The Executive Secretary will select topics of interest to be presented to the Conference membership and will arrange for suitable program speakers.

4. The Committee voted to retain the $15 registration fee. An allocation of $750 was also approved for expenditures by the Committee on Education to cover expenses associated with the National Weights and Measures Week and other educational projects.

5. Attendance at and participation in the open committee meetings held on Monday of the Conference week was discussed. The Executive Committee will encourage more delegates to attend and participate in all open meeting sessions.

6. The Committee voted its approval to hold interim meetings of the Conference standing committees and to pay the travel expenses of committee members to such meetings.

7. The Committee expressed its desire to continue the practice of obtaining names of Conference members who have passed away during the year and to display in an appropriate manner a list of these names in the registration desk area each year.

8. The chairman announced the appointment of the following associate members to serve on the newly formed annual Associate Member-

ship Committee: Arthur Sanders, Scale Manufacturers Association; Emmett Wehmann, Neptune Meter Company; Bernard Wasko, Voland Corporation; William Louthan, Tokheim Corporation; John Speer, Milk Industry Foundation; and Lee Moremen, Plate, Cup, and Container Institute. Mr. Sanders, committee chairman, met briefly with the Executive Committee to discuss future plans.

9. The following motion on the establishment of a metric task force was adopted:

> The Executive Committee hereby authorizes the Executive Secretary to establish a task force on metrication, composed of the representatives from the active, advisory, and associate members of this Conference and such consultants as may be necessary to study the possible effects that increased use or non-use of the Metric System might have on the weighing and measuring field and to report such effects along with any recommendations it may have to the Conference in 1970.
>
> Such task force would be expected to give special attention to, but not limit itself to, the impacts that metrication might have on (1) State and local laws, regulations, and on the duties of weights and measures officials; (2) device manufacturers; and (3) users of commercial weighing and measuring devices.
>
> In carrying out its responsibilities, the task force would coordinate its efforts with similar ones at the National Bureau of Standards. The Executive Secretary is further authorized to take whatever action or actions deemed necessary and proper to aid the task force in its assignment.

REPORT OF THE CONFERENCE COMMITTEE ON LIAISON WITH THE NATIONAL GOVERNMENT

Presented by K. C. Allen, *Acting Chairman, Hobart Manufacturing Company, Dayton, Ohio*

Tuesday, June 10, 1969

The Committee on Liaison with the National Government, at its interim meeting on February 5, 1969, undertook a thorough reexamination of the authority delegated to it by the Conference as described in the Organization and Procedure of The Conference. The consensus was that the Liaison Committee had received sufficient authority and direction from the Conference to act on any and all matters involving Federal and State relations in the weights and measures area.

A course of bringing to the attention of Federal agencies and officials the views of the Conference, particularly in connection with the Fair Packaging and Labeling Act and regulations adopted thereunder, has been actively pursued by the Committee. Copies of the Liaison Committee Report of the 53d National Conference were sent to all appropriate Federal regulatory agencies.

The Committee intends to maintain the line of communications already established with Federal agencies and to aggressively pursue all weights and measures matters so that the voice of the Conference will be made part of the record in all appropriate instances.

RELATIONS WITH FEDERAL REGULATORY AGENCIES

During its interim meeting in Washington, the Committee received a report from the Office of Weights and Measures concerning relations with the Food and Drug Administration, the Federal Trade Commission, the U.S. Department of Agriculture and the Alcohol, Tobacco and Firearms Division of the U.S. Treasury Department. The report covered the status of various regulations and proposals currently underway in those agencies.

Also considered was a communication from the National Conference Committee on Laws and Regulations concerning the proposed FTC exemptions for packaged plant foods, fertilizers, and similar lawn care products. The Committee on Laws and Regulations requested that a letter be sent to the Federal Trade Commission reiterating the position of the Conference concerning the labeling of such

products when in package form. The letter that was sent essentially restated the position taken by the Conference at its 53d annual meeting to the effect that such products should be labeled in accord with the established requirements and that there was insufficient evidence for the proposed FTC exemption.

The Committee on Laws and Regulations also requested that a letter be sent to the Federal Trade Commission and the Food and Drug Administration concerning the Conference's views on the labeling of multi-unit packages and urging adoption by the Federal regulatory bodies of requirements identical to those required in the Model State Packaging and Labeling Regulation. A suitable letter was prepared and mailed to these agencies urging their adoption of section 5.3.3. covering multi-unit packages.

The Committee instructed the Secretary to send a letter to the U.S. Department of Agriculture concerning forthcoming regulations under the new Federal Poultry Products Inspection Act. The purpose of the communication was to urge USDA to make every effort to achieve uniformity between existing package labeling regulations and any new regulations issued under the Poultry Products Inspection Act.

WEIGHTS AND MEASURES ENFORCEMENT ON FEDERAL ESTABLISHMENTS

The problem of weights and measures enforcement on military bases and other Federal establishments was discussed during the interim meeting. It was the unanimous view of the Committee that the enforcement of weights and measures requirements on such bases should be the same as in any commercial establishment. Accordingly, the Committee directed its Secretary to continue negotiations with the Department of Defense and the Interior Department on these matters.

FAIR PACKAGING AND LABELING ACT MANUAL

The Committee considered the need for a manual incorporating all Federal regulations adopted under the Fair Packaging and Labeling Act and the Model Packaging Regulation. The Committee, having been informed that both the FDA and FTC intend to prepare manuals covering their activities and requirements under the Act, strongly urges that *one* manual be developed incorporating all of the requirements, rather than separate manuals from each Federal agency. Such a manual should contain FTC regulations, FDA regulations, NCWM Model Regulations, exemptions, interpretations and other appropriate Federal regulations regarding packaging and labeling when and as they are issued. The Committee took the view that such a manual could most appropriately be prepared by the Office of Weights and Measures in light of the requirement of section 9 of the Fair Packag-

ing and Labeling Act that the Secretary of Commerce promote, to the greatest practicable extent, uniformity in State and Federal regulation of the labeling of consumer commodities.

J. H. Lewis, *Chairman*
K. C. Allen
R. C. Primley
E. E. Wolski
H. F. Wollin, *Secretary*
E. A. Vadelund, *Staff Assistant*
Committee on Liaison with the National Government

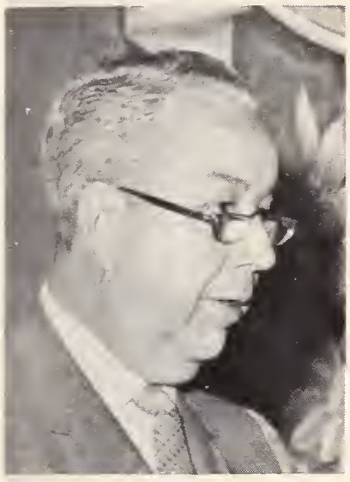
(On motion of the Committee Chairman, seconded from the floor, the report of the Committee on Liaison with the National Government was unanimously adopted by voice vote.)

REPORT OF THE CONFERENCE COMMITTEE ON EDUCATION

Presented by Mr. J. I. Moore, *Chairman, Superintendent, Weights and Measures Division, State of North Carolina*

Thursday, June 12, 1969

1. INTRODUCTION



The Committee on Education's activities are developed through discussions and recommendations made to the Committee throughout the year and at its open hearing held during the National Conference each year. Your participation in these meetings is requested, and all recommendations of merit are appreciated and considered. The Committee well realizes the importance of education for the advancement of better weights and measures programs.

2. PUBLIC RELATIONS

Favorable publicity relating to weights and measures activities is always welcome by all weights and measures officials and especially the Committee on Education. During the past year we have been most fortunate in having Mrs. Margaret Dana write at least six items for her syndicated news column which appeared in various papers throughout the country. These columns have been very informative and complimentary of the work performed by weights and measures departments. The Committee wishes at this time to thank Mrs. Dana for her continued support.

During the open meeting several officials reported on very successful public relations programs being carried on in the elementary and high schools throughout the country. The use of the film, "Assignment Weights and Measures," followed by a fifteen or twenty minute discussion of the local program was highly recommended. The Committee plans to give serious consideration to the development of a supplementary film for use in future programs of this type.

It is impossible to place enough emphasis upon educating the public to the importance of our work. The weights and measures official must take advantage of every possible source available to carry out this task and the grade schools should not be overlooked. Without public awareness, weights and measures will never grow.

3. CONSUMER PAMPHLET

Mrs. Dana suggested at the 53d National Conference on Weights and Measures that an appropriate consumer's pamphlet be prepared

containing information outlining the purposes and activities of weights and measures officials and directions as to how and where weights and measures officials can be reached to answer consumer complaints. This pamphlet has been prepared by the Committee and is available for distribution. It is our hope that this publication will be the start of increased productions in the area of Conference publications in the future.

4. UNIFORM TELEPHONE LISTINGS

The subject of uniform telephone listings was brought to the attention of this Committee. The Committee hopes to develop a simple coordinated listing across the country enabling consumers to easily reach a weights and measures official when they feel they have a valid complaint or inquiry.

The Committee recommends that officials in all weights and measures jurisdictions use a uniform telephone listing. This listing would come under the W's—Weights and Measures.

5. FORMAL EDUCATION

During the past year the Measurement Science course at Alfred State Technical College at Alfred, New York has continued to be a success. Not only did the college have their regular curriculum for the students, but had two sessions of summer school which were available to anyone interested in commercial weighing and measuring. Both of these summer classes were filled to capacity with people who have various interests in weights and measures.

Your Committee has encouraged in the past a method for rendering financial support to selective students. The National Scale Men's Association Scholarship Fund has now reached a point that two scholarships have been awarded.

Considerable progress has been made towards the establishment of additional courses in Illinois and California and also efforts in this same direction are now being made in Georgia. The Committee recognizes the outstanding contribution made by the National Scale Men's Association in this area.

6. TECHNICAL TRAINING SCHOOLS

An increased number of jurisdictions each year are taking advantage of the opportunity to arrange technical training schools conducted by the staff of the Office of Weights and Measures of the National Bureau of Standards. The Committee offers its thanks to the Office of Weights and Measures and its staff of dedicated personnel who have assisted in conducting these schools throughout the country.

With additional States receiving the new lab standards and instruments from the National Bureau of Standards, it is imperative that

a continuing course of training be provided for laboratory personnel. Unless properly trained personnel are available to use these new standards they cannot serve the purpose for which they were designed and intended. Excellent progress has been made by the Office of Weights and Measures in training the laboratory personnel and the Committee wishes to register its appreciation for such assistance.

7. HOME STUDY COURSE

According to information received by the Committee more than 1,500 weights and measures officials have successfully completed the original Home Study Course. All who have taken the course have been most complimentary concerning its value and are enthusiastic in encouraging others to take advantage of its use.

In view of the apparent success of the original course and in response to several requests from weights and measures officials, the Committee is committed to the preparation of a new advanced Home Study Course. This course would be available as "graduate study" for those officials that have completed the original material.

8. WEIGHTS AND MEASURES HANDBOOK

During the last annual Committee meeting, discussion was held regarding the publication of a handbook for weights and measures officials to contain a variety of information regarding education in weights and measures. A great deal of progress has been made by other technical groups in this area. The Committee will correlate available material for evaluation. (NSMA, ISA, NCSL)

9. NATIONAL WEIGHTS AND MEASURES WEEK

This year, through a generous appropriation of the National Conference the Committee on Education was able to have reproduced 20,000 "Third Man" posters. These posters were of a reduced size from the original "Third Man" poster. However this particular size has its advantage and can be placed in areas making it more susceptible to being seen and read. These have been distributed throughout the country, and it is our sincere hope that they were used to the best possible advantage. These posters not only bring attention to Weights and Measures Week, but have a message that is short, to the point, and meaningful. The Committee would like to thank Louis Vezina, City Sealer, City of Alexandria for his many contributions in this area.

The Committee on Education wishes to publicly thank Mr. Arthur Sanders, Executive Secretary of the Scale Manufacturers Association for the help he has given the weights and measures officials this year

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and in the past in furnishing materials and guidelines for use during National Weights and Measures Week.

Mr. G. E. Mattimoe of the State of Hawaii served as Sub-Committee Chairman for National Weights and Measures Week. In his report Mr. Mattimoe acknowledged commendable efforts on the part of many jurisdictions, but pointed out the necessity for guidelines to better direct future efforts for more meaningful results. Mr. Mattimoe also pointed out the need for adopting measures of effectiveness for all weights and measures programs.

10. NSMA SEMINAR TYPE MEETINGS

The Executive Secretary of the National Conference has had correspondence with Mr. J. A. King, Sr. of Greensboro, North Carolina regarding his acceptance speech made last April in Toronto, Canada when he accepted the presidency of the National Scale Men's Association for 1969–1970. In this speech Mr. King suggests that all local divisions of NSMA plan at least two one-day seminar type meetings each year. The purpose of these meetings would be to serve as a vehicle by which *both* scale men and weights and measures officials could increase their knowledge of their own and each other's professions. Your Committee highly endorses this activity of NSMA to promote the education and professional development of scale men and regulatory officials and pledges its support and participation in the development of the program. We urge weights and measures personnel to actively participate in this program.

11. TECH MEMO DISTRIBUTION

In recognition of the merit of the tech memo information it is suggested that all jurisdictions duplicate and disseminate this material to all personnel.

* * * * * * *

The Committee on Education was born out of a resolution adopted by the 29th National Conference on Weights and Measures. Your Committee plans to remain active during the entire year and will seek the suggestions and assistance of all who wish to further the cause of weights and measures education. In particular, we urge all weights and measures officials to push harder for weights and measures "awareness" by enlarging your present public relations programs.

J. I. Moore, *Chairman*
A. D. Rose
W. I. Thompson
G. E. Mattimoe
B. A. Pettit
H. F. Wollin, *Secretary*
R. N. Smith, *Staff Assistant*

Committee on Education

(On motion of the Committee Chairman, seconded from the floor, the Report of the Committee on Education was adopted by voice vote.)

REPORT OF THE CONFERENCE COMMITTEE ON SPECIFICATIONS AND TOLERANCES

Presented by R. Rebuffo, *Acting Chairman, Chief Deputy State Sealer, Bureau of Weights and Measures, State of Nevada*

(Thursday, June 12, 1969)

The Committee on Specifications and Tolerances submits its report to the 54th National Conference on Weights and Measures. The report consists of the tentative report, transmitted in April as part of the Conference Announcement, as amended by the final report.

The report represents recommendations of the Committee that have been formed on the basis of written and oral comments received during the year and oral representations made during the open meeting of the Committee. All recommended "amendments" are to appropriate provisions of the codes of National Bureau of Standards Handbook 44—3d Edition, *Specifications, Tolerances, and Other Technical Requirements for Commercial Weighing and Measuring Devices.*

SCALE CODE

1. *Specification paragraph S.1.1. ZERO INDICATION.*—In its tentative report the Committee stated that it was in agreement with a suggestion it had received to amend this paragraph so that it would apply to all scales that are equipped with indicating or recording elements and not be limited only to automatic-indicating scales or to scales having a balance indicator. The Committee, therefore, recommended that paragraph S.1.1. be amended to read:

S.1.1. ZERO INDICATION.—A scale equipped with indicating or recording elements shall either indicate or record a zero balance condition. An automatic-indicating scale shall also indicate or record an out-of-balance condition on either side of zero.

On the basis of a suggestion during the open meeting by Mr. D. B. Kendall, representing the Scale Manufacturers Association, the Committee reconsidered its recommendation in the tentative report and recommended that this paragraph be amended to read as follows:

S.1.1. ZERO INDICATION.—Provision shall be made on a scale equipped with indicating or recording elements to either indicate or record a zero balance condition, and on an automatic-

indicating scale or balance indicator to indicate or record an out-of-balance condition on either side of zero.

DISCUSSION ON FOREGOING ITEM

MR. K. C. ALLEN: I have just one minor suggestion to offer that I feel will eliminate any misunderstanding of this paragraph. We say "out-of-balance condition on either side of zero." I believe this could be interpreted to allow a scale to show an out-of-balance condition on only one side of zero. My suggestion is to change the wording to read "record an out-of-balance condition on both sides of zero."

MR. J. I. MOORE: I move that we amend paragraph S.1.1. to read **"both sides"** instead of "either side" as suggested by Mr. Allen.

(The foregoing item as amended was adopted by voice vote.)

2. *User requirement paragraph UR.4.1. BALANCE CONDITION.*—The Committee recommended in its tentative report that user requirement paragraph UR.4.1. be amended to provide for greater clarification as it relates to specification paragraph S.1.1. above. Accordingly, the Committee recommended that paragraph UR.4.1. be amended to read:

UR.4.1. BALANCE CONDITION.—A scale designed to indicate or record a zero-load balance shall indicate or record such zero-load balance whenever there is no load on the load-receiving element. A scale not equipped to indicate or record a zero-load balance shall be maintained in balance under any no-load condition.

DISCUSSION ON FOREGOING ITEM

MR. ALLEN: I think the Committee forgot about scales that have tare beams or tare devices. I know that the scales that we manufacture that have tare beams and tare devices do not indicate zero whenever there is no load on the load-receiving element.

MR. KENDALL: There are other conditions also. For instance, a man who is operating a beam scale puts the poise out to counterbalance the load. When he removes the load, the scale does not return to zero. A man using a unit-weight scale may have to use unit weights to counterbalance a portion of the load. When the load is removed, the scale does not indicate zero. I suggested, on Monday, wording which would overcome this problem. I would like to recommend that the first sentence be amended so that this paragraph will read as follows:

UR.4.1. BALANCE CONDITION.—The zero-load adjustment of a scale shall be maintained so that, with no load on the load-receiving element and all load counterbalancing elements of the

scale such as poises, drop weights, or counterbalance weights set to zero, the scale shall indicate or record a zero balance condition. A scale not equipped to indicate or record a zero-load balance shall be maintained in balance under any no-load condition.

(After further discussion, a motion was made to amend this paragraph as suggested by Mr. Kendall and the item was adopted by voice vote.)

3. *Specification paragraph S.2.3. LEVEL-INDICATING MEANS.*—The Committee was of the opinion that this paragraph should apply not only to bench and counter scales, but to all scales of a portable design that require no special installation, that may be moved from place to place, and that are so designed that the weighing performance can be adversely affected by an out-of-level condition.

Thus, the Committee recommended that specification paragraph S.2.3. be amended to read:

S.2.3. LEVEL-INDICATING MEANS.—*If the weighing performance of a portable scale (except a prescription, jewelers, cream-test, or moisture-test scale) is changed by an amount greater than the appropriate acceptance tolerance when it is moved from a level position and rebalanced in a position that is out of level in any direction by 5 percent or approximately 3 degrees, the scale shall be equipped with level-indicating means. The indications of this level-indicating means shall be readily observable without the necessity of disassembly of any scale parts requiring the use of mechanical means separate from the scale. (This requirement is nonretroactive as of July 1, 1969,* except for bench and counter scales, for which it is retroactive.)

(The foregoing item was adopted by voice vote.)

4. *Scales with multiple load-receiving elements.*—This item was carried over from last year's Conference. During that Conference, scale manufacturers requested that the specification paragraph on multiple load-receiving elements proposed by the Committee be held in abeyance. The Committee agreed that action on the proposed specification might be premature, but expressed its conviction that scales that have a single indicating or recording element and that are equipped with more than one load-receiving element do offer the distinct possibility of both inaccurate results and deliberate misuse.

The Committee has since learned that several States have had requirements such as proposed by the Committee last year in effect for many years, and apparently manufacturers are complying with them. Accordingly, the Committee saw no justification for further delay of

this item and recommended in its tentative report the addition of a new nonretroactive specification paragraph S.4.3. as follows:

S.4.3. MULTIPLE LOAD-RECEIVING ELEMENTS.—*On a scale with a single indicating or recording element, or a combination indicating-recording element, that is coupled to two or more load-receiving elements with independent weighing systems, means shall be provided to prohibit the activation of any load-receiving element (or elements) not in use, and automatic means shall be provided to indicate clearly and definitely which load-receiving element (or elements) is in use.* [1969]

On the basis of suggestions received by letter prior to the Conference and of discussion during the open committee meeting, the Committee agreed that this specification should be clarified by exempting bench or counter scales from the specification. Accordingly, the Committee recommended that the new nonretroactive specification paragraph S.4.3. be amended to read as follows:

S.4.3. MULTIPLE LOAD-RECEIVING ELEMENTS.—Except for bench and counter scales, a scale with a single indicating or recording element, or a combination indicating-recording element, that is coupled to two or more load-receiving elements with independent weighing systems shall be provided with means to prohibit the activation of any load-receiving element (or elements) not in use, and shall be provided with automatic means to indicate clearly and definitely which load-receiving element (or elements) is in use. **[1969]**

(The foregoing item as amended was adopted by voice vote.)

5. To provide further clarification of specification paragraph S.4.3., the Committee recommended the addition of the following two definitions to the Scale Code:

bench scale. See counter scale.

counter scale. One which, by reason of its size, arrangement of parts, and moderate nominal capacity, is adapted for use on a counter or bench. Sometimes called bench scale.

(The foregoing item was adopted by voice vote.)

6. *Specification paragraph S.6 MARKING REQUIREMENTS.*—Officials in the State of Maryland have proposed a new specification requirement that would require manufacturers of livestock, vehicle, and railway track scales to mark on the scale identification or nomenclature plate the maximum capacity of each load-receiving element. One of the principal reasons cited for this proposal is that many weights and measures officials are concerned with the problem of load-

ing greater than the section capacity of a scale during testing operations and thus causing damage to the scale. In recent years, weights and measures jurisdictions have purchased test units with greatly increased test-load capability. In many cases a total test-weight load ranging between 20,000 and 40,000 pounds can be easily concentrated over a particular section of the scale. Thus, the Committee saw much merit in this proposal. Such a requirement should furnish information that would be helpful not only to weights and measures officials, but to all parties, including manufacturers, salesmen, users, and repairmen. Several manufacturers have indicated their approval of this proposal and have stated that its adoption would place no particular burden on them.

The Committee, therefore, in its tentative report recommended the addition of new nonretroactive specification paragraph S.6.3. as follows:

S.6.3 FOR LIVESTOCK, VEHICLE, AND RAILWAY TRACK SCALES ONLY.—*A livestock, vehicle, or railway track scale shall be marked with the maximum capacity of each section of the load-receiving element of the scale. Such marking shall be accurate and conspicuously presented on the identification or nomenclature plate that is attached to the indicating element of the scale.* [1969]

During the open meeting Mr. Kendall suggested that, since this is a new requirement which would require redesign of the nameplates for a number of scale manufacturers, the proposed specification paragraph be revised to permit the new marking requirements to be adjacent to the identification or nomenclature plate. The Committee could see no objection to this request, and accordingly recommended that the new specification paragraph S.6.3. be amended to read as follows:

S.6.3. FOR LIVESTOCK, VEHICLE, AND RAILWAY TRACK SCALES ONLY.—A livestock, vehicle, or railway track scale shall be marked with the maximum capacity of each section of the load-receiving element of the scale. Such marking shall be accurately and conspicuously presented on or adjacent to the identification or nomenclature plate that is attached to the indicating element of the scale. **[1969]**

(The foregoing item as amended was adopted by voice vote.)

7. *Prepackaging scales.*—One of the difficult problems confronting weights and measures officials, manufacturers, and users of prepackaging scales has been how to handle the conflict that is created by the application of tolerances on prepackaging scales when no similar tolerances are allowed in the packaged quantities weighed over these scales. Technically, the problem is that tolerance values for prepackaging scales apply equally to errors of underregistration and to errors of

overregistration, whereas variations in packages are not permitted to such extent that the average of the quantities in the packages of a particular commodity weighed by a prepackaging scale is below the labeled quantity.

Thus, if the performance of a prepackaging scale is such that its error is within the appropriate tolerance limits, but on the side of overregistration, then it is possible for all packages that are carefully weighed over the scale to have small minus errors and be, therefore, illegal.

The National Conference on Weights and Measures and many State conferences have held much discussion on the subject of tolerances on prepackaging scales during the past decade. It has been argued that prepackaging scales should be considered as "noncommercial," should be excluded from the requirements of Handbook 44, and should not be routinely tested by weights and measures inspectors. Action along these lines has been taken by a few jurisdictions in recent years.

The Committee felt that the time had come to move toward a solution to the problem. Serious consideration was given to several proposals, including one to delete all requirements for prepackaging scales from Handbook 44 this year. Such action may some day be advisable and necessary. However, as an interim move, the Committee believed that a simple footnote added in the Scale Code would be a practicable step to take at this time.

Accordingly, the Committee recommended adding a footnote following the section on User Requirements in the Scale Code as follows:

[Footnote]—Prepacking scales (and other commercial devices) used for putting up packages in advance of sale are acceptable for use in commerce if all appropriate provisions of Handbook 44 are met. Users of such devices must be alert to the legal requirements relating to the declaration of quantity on a package. Such requirements are to the effect that, on the average, the contents of the individual packages of a particular commodity comprising a lot, shipment, or delivery must contain at least the quantity declared on the label. The fact that a prepackaging scale may overregister, but within established tolerances, and is approved for commercial service is not a legal justification for packages to contain, on the average, less than the labeled quantity.

(The foregoing item was adopted by voice vote.)

8. *Revision of the section on tolerances.*—The Committee recommended a revision in the makeup of the section on tolerances as found on pages 49 to 54. This change should provide greater clarity and ease of reference. There are no changes in the technical content of the

paragraphs involved in this revision that follow. (For simplicity, only the paragraph heading is given.)

T. TOLERANCES.

T.1. TOLERANCE APPLICATION.

T.1.1. TO UNDERREGISTRATION AND TO OVERREGISTRATION.

T.1.2. TO TESTS INVOLVING DIGITAL INDICATIONS OR REPRESENTATIONS.

T.1.3. TO SHIFT TESTS.

T.1.4. TO INCREASING-LOAD TESTS.

T.1.5. TO DECREASING-LOAD TESTS ON AUTOMATIC-INDICATING SCALES.

T.1.6. TO RATIO TESTS.

T.2. MINIMUM TOLERANCE VALUES.

T.2.1. GENERAL.—Except for prescription, jewelers, cream-test, moisture-test, animal, livestock, crane, and railway track scales, . . .

T.2.2. FOR CLASS A PRESCRIPTION SCALES.

T.2.3. FOR JEWELERS SCALES.

T.2.4. FOR CREAM-TEST AND MOISTURE-TEST SCALES.

T.2.5. FOR ANIMAL SCALES.

T.2.6. FOR LIVESTOCK SCALES.

T.2.7. FOR CRANE SCALES.

T.2.8. FOR RAILWAY TRACK SCALES.

TABLE 3.—MINIMUM TOLERANCE VALUES FOR SCALES EXCEPT PRESCRIPTION, JEWELERS, CREAM-TEST, MOISTURE-TEST, ANIMAL, LIVESTOCK, CRANE, AND RAILWAY TRACK SCALES.

T.3. BASIC TOLERANCE VALUES.

T.3.1. APPLICATION.

T.3.2. GENERAL.—Except for prescription, jewelers, cream-test, moisture-test, animal, livestock, crane, axle-load, vehicle, and railway track scales, and wheel-load weighers, . . .

T.3.3. FOR CLASS A PRESCRIPTION SCALES.

T.3.4. FOR JEWELERS SCALES.

T.3.5. FOR CREAM-TEST AND MOISTURE-TEST SCALES.

T.3.6. FOR ANIMAL, LIVESTOCK, CRANE, AXLE-LOAD, VEHICLE, AND RAILWAY TRACK SCALES.

T.3.7. FOR WHEEL-LOAD WEIGHERS.

TABLE 4.—BASIC TOLERANCES FOR SCALES INDICATING OR RECORDING IN AVOIRDUPOIS UNITS, EXCEPT FOR PRESCRIPTION, JEWELERS, CREAM-TEST, MOISTURE-TEST, ANIMAL, LIVESTOCK, CRANE, AXLE-LOAD,

VEHICLE, AND RAILWAY TRACK SCALES, AND WHEEL-LOAD WEIGHERS.

(See T.1., T.2., and T.3.)

TABLE 5.—BASIC TOLERANCES FOR SCALES INDICATING OR RECORDING IN EITHER APOTHECARIES OR METRIC UNITS, EXCEPT FOR PRESCRIPTION, JEWELERS, CREAM-TEST, MOISTURE-TEST, ANIMAL, LIVESTOCK, CRANE, AXLE-LOAD, VEHICLE, AND RAILWAY TRACK SCALES, AND WHEEL-LOAD WEIGHERS.

(See T.1., T.2., and T.3.)

(The foregoing items relating to the section on tolerances were adopted by voice vote.)

9. *User requirement paragraph UR.1.1 VALUE OF MINIMUM GRADUATED INTERVALS ON PRIMARY INDICATING AND RECORDING ELEMENTS.*—The Committee has received several suggestions to review and reevaluate the various requirements pertaining to the value of minimum graduated intervals for certain scales as stipulated under paragraph UR.1.1. The Committee is receptive to the suggestions and has asked the Office of Weights and Measures to initiate a technical study on this matter. Such a study will no doubt also require investigation into the structure of tolerance requirements, particularly those relating to minimum tolerance values. Weights and measures officials, manufacturers, and others who may wish to submit suggestions concerning this item should send their comments to the Committee Secretary. The Committee will report on this study as progress in this area develops.

With respect to UR.1.1., a State weights and measures official proposed the addition of a new user requirement that would establish a minimum graduated interval for railway track scales. Similar proposals were also brought to the Committee's attention, and such a requirement was discussed at the 1968 Conference of the Western Weights and Measures Association.

The Committee agreed that this was a sound and needed requirement and accordingly recommended in its tentative report adding a new nonretroactive user requirement paragraph as follows:

UR.1.1.7. FOR RAILWAY TRACK SCALES ONLY.—*The value of the minimum graduated interval shall be not greater than 50 pounds.* [1969]

During the open committee meeting, the Committee heard a recommendation to amend its tentative report by changing the value of the minimum graduated interval for railway track scales to 100 pounds. It was pointed out that this change will provide uniformity

with the AREA specifications for the manufacture and installation of automatic weight indicating and recording devices adopted in 1966. The Committee felt that this suggestion was sound, and accordingly recommended that the new nonretroactive requirement paragraph UR.1.1.7. be amended to read:

UR.1.1.7. ***FOR RAILWAY TRACK SCALES ONLY.—The value of the minimum graduated interval shall be not greater than 100 pounds.*** [1969]

(The foregoing item as amended was adopted by voice vote.)

10. *Revision of section on user requirements.*—For reasons similar to those explained in item 8, the Committee took this opportunity to revise the makeup of the section on user requirements. This revision represents only a realinement of the paragraphs and does not involve changes in technical content except as specified in UR.1.1.7.

UR. USER REQUIREMENTS.
UR.1. SELECTION REQUIREMENTS.
UR.1.1. VALUE OF MINIMUM GRADUATED INTERVALS ON PRIMARY INDICATING AND RECORDING ELEMENTS.
UR.1.1.1. FOR RETAIL FOOD SCALES ONLY.
UR.1.1.2. FOR ANIMAL SCALES ONLY.
UR.1.1.3. FOR LIVESTOCK SCALES ONLY.
UR.1.1.4. FOR HAND-OPERATED GRAIN HOPPER SCALES ONLY.
UR.1.1.5. FOR CRANE SCALES ONLY.
UR.1.1.6. FOR AXLE-LOAD AND VEHICLE SCALES AND WHEEL-LOAD WEIGHERS ONLY.
UR.1.1.7. FOR RAILWAY TRACK SCALES ONLY.—The value of the minimum graduated interval shall be not greater than 100 pounds [1969]
UR.1.1.8. FOR SCALES WITH NOMINAL CAPACITIES OF 500 POUNDS OR MORE, OTHER THAN ANIMAL, LIVESTOCK, HAND-OPERATED GRAIN HOPPER, CRANE, AXLE-LOAD, VEHICLE SCALES, WHEEL-LOAD WEIGHERS, AND RAILWAY TRACK SCALES.

(The foregoing items relating to the section on user requirements were adopted by voice vote.)

11. *User requirement paragraph UR.4.3. LENGTHENING AND WIDENING OF PLATFORMS.*—Weights and measures officials have registered complaints about the practice of increasing the capacities of large scales by replacing the original indicating or recording

elements with elements of larger capacity—for example, installing a 50-ton dial on a 30-ton scale. Such a practice could lead to serious errors and could certainly present the possibility of a safety hazard.

To help control this problem, the Committee recommended in its tentative report that user requirements paragraph UR.4.3. be amended as follows:

UR.4.3. SCALE MODIFICATIONS.—Neither the length nor the width of the load-receiving element of a scale shall be increased beyond the manufacturer's design dimension, nor shall the capacity of a scale be increased beyond its design capacity by replacing the original primary indicating or recording element with one of a higher capacity, except when the modification has been approved by competent engineering authority, preferably that of the engineering department of the manufacturer of the scale and by the weights and measures authority having jurisdiction over the scale.

Mr. Kendall, during the open meeting, remarked that it would be possible to make a minor modification in the indicating element which would increase its capacity without correspondingly increasing the capacity of the lever system. In order to preclude such a possibility, he suggested that the words "or modifying" be added to this paragraph. The Committee agreed with this suggestion and recommended that user requirement paragraph UR.4.3. be amended to read as follows:

UR.4.3. SCALE MODIFICATIONS.—Neither the length nor the width of the load-receiving element of a scale shall be increased beyond the manufacturer's design dimension, nor shall the capacity of a scale be increased beyond its design capacity by replacing or modifying the original primary indicating or recording element with one of a higher capacity, except when the modification has been approved by competent engineering authority, preferably that of the engineering department of the manufacturer of the scale, and by the weights and measures authority having jurisdiction over the scale.

(The foregoing item as amended was adopted by voice vote.)

TENTATIVE CODE FOR BELT-CONVEYOR SCALES

During the past year the Committee received several recommendations from weights and measures officials and representatives of industry to change the Belt-Conveyor Scale Code from tentative to final status. It was contended that the code in its tentative form did

not effectively serve the interest of either regulatory officials or manufacturers and users. The Committee reviewed and evaluated the few changes in code requirements that were brought to its attention during the past two years. It was the view of the Committee that there no longer existed any apparent advantage in holding the code in a tentative status. Since the overwhelming opinion of those who communicated with the Committee on this item was in favor of giving final status to this code, the Committee recommended that the Tentative Code for Belt-Conveyor Scales be adopted in final form with a minor amendment to the last sentence of notes paragraph N.3.1., so that this paragraph will read as follows:

N.3.1. ZERO LOAD TEST.—If a belt conveyor has been idle for a period of two hours or more before the start of the test, the conveyor shall be run empty for not less than 15 minutes. The counter shall be read when a marked spot on the belt passes a marked spot on the conveyor before and after the test. The initial test shall be conducted with the belt conveyor empty for an interval of not less than 10 minutes and not less than 3 circuits of the belt. If the zero-load test error is more than 0.01 percent of rated capacity per 10 minutes of test, the device shall be adjusted and the zero-load test rerun before continuing.

(The foregoing item was adopted by voice vote.)

CODE FOR LIQUID-MEASURING DEVICES

1. *Specification paragraph S.2.5.1.*—Increasingly, complaints have been brought to the Committee that the current design of certain motor-fuel dispensers is such that the nozzle can be hung at what to a customer would appear to be the normal position without activating the zero-set-back interlock. Specification paragraph S.2.5.1. was amended in 1965 in an attempt to correct this situation which, itself, does seem to facilitate the perpetration of fraud, because it would permit the start of a delivery without clearing the delivery and value indications.

Discussions with dispenser manufacturers have thus far proven to be not fruitful. Representatives of manufacturers have expressed the view that the problem can be solved with vigorous enforcement of existing requirements. The Committee, however, has been of the opinion that design modifications should be introduced where these are necessary to overcome the difficulty.

Accordingly, the Committee recommended in its tentative report that specification paragraph S.2.5.1. be amended to read:

S.2.5.1. ZERO-SET-BACK INTERLOCK.—A retail motor-fuel device of the meter type shall be so constructed that, after a particular delivery cycle has been completed by movement of the starting lever to its shutoff position, or to what would appear to be its normal shutoff position from some reasonable "customer" position, or by returning the discharge nozzle to what would appear from a reasonable "customer" position to be its normal hanging location, an effective automatic interlock will prevent a subsequent delivery being started until the indicating elements have been returned to their correct zero positions.

Discussion during the open meeting pointed up the need to clarify the language of this paragraph as recommended in the tentative report to avoid misinterpretation. Accordingly, the Committee recommended that specification paragraph S.2.5.1. be amended to read:

S.2.5.1. ZERO-SET-BACK INTERLOCK.—A retail motor-fuel device of the meter type shall be so constructed that, after a particular delivery cycle has been completed by movement of the starting lever to its shutoff position, an effective automatic interlock will prevent a subsequent delivery being started until the indicating elements have been returned to their correct zero positions. The starting lever must be in its shutoff position and the zero-set-back interlock engaged before the discharge nozzle can be returned to its designed hanging position.

(The foregoing item was adopted by voice vote.)

2. *User requirement paragraph UR.3.4. POSITION OF DISCHARGE NOZZLE.*—On the basis of discussion during the open meeting and the recommended change to specification paragraph S.2.5.1., the Committee felt that user requirement paragraph UR.3.4. should also be amended to provide clarification of the present language and to facilitate the effective enforcement of these paragraphs. Accordingly, the Committee recommended that the title of UR.3.4. be changed and that this paragraph be amended to read:

UR.3.4. ACTIVATION OF ZERO-SET-BACK INTERLOCK AND POSITION OF DISCHARGE NOZZLE.—The starting lever on a retail motor-fuel device shall be returned to its shutoff position following each delivery to a customer. The return of the starting lever to its shutoff position shall activate the zero-set-back interlock. The zero-set-back interlock shall have been activated before the nozzle is returned to its designed hanging position.

DISCUSSION ON THE FOREGOING ITEM

There was considerable discussion on this item before the following motion to amend was made by Mr. Cottom:

MR. C. O. COTTOM: I move that we amend the first sentence in UR.3.4. to read:

On a retail motor-fuel device, the starting lever shall be returned to its shutoff position and the discharge nozzle shall be returned to its designed hanging position following each delivery to a customer.

(The foregoing item was adopted by voice vote.)

3. *Temperature compensation for wholesale devices.*—Because temperature-compensating devices are being used widely for the sale and delivery of petroleum and perhaps other products at wholesale, the Committee recommended in its tentative report a number of amendments to the Code for Liquid-Measuring Devices to provide for proper control. Among these was a new specification paragraph S.2.6.2. reading as follows:

S.2.6.2. PROVISION FOR DEACTIVATING AUTOMATIC TEMPERATURE COMPENSATOR.—Except in the case of a device equipped with two indicating elements, or two recording elements, one designed to indicate, or record, in terms of uncompensated gallons and the other designed to indicate, or record, in terms of gallons compensated to 60°F, provision shall be made to facilitate the deactivation of the automatic temperature-compensating mechanism from the metering system, so that the meter may indicate, and record if it is equipped to record, in terms of the uncompensated volume.

Meter manufacturers suggested during the open meeting that this paragraph be changed to avoid the inference that a device may be equipped to record only, with no primary indicator. The Committee believed this to be a sound suggestion and recommended that specification paragraph S.2.6.2. be amended to read:

S.2.6.2. PROVISION FOR DEACTIVATING AUTOMATIC TEMPERATURE COMPENSATOR.—Except in the case of a device equipped with two indicating elements, or two recording elements, one designed to indicate, or record if it is equipped to record, in terms of uncompensated gallons, and the other designed to indicate, or record if it is equipped to record, in terms of gallons compensated to 60° F, provision shall be made to facilitate the deactivation of the automatic temperature-compensating

mechanism from the metering system, so that the meter may indicate, and record if it is equipped to record, in terms of the uncompensated volume.

(The above item was adopted by voice vote.)

4. Since the specification in paragraph S.2.6.2. of the Code for Liquid-Measuring Devices is also included in the Code for Liquefied Petroleum Gas liquid-Measuring Devices, the Committee recommended that specification paragraph S.2.6.1. in the Code for Liquefied Petroleum Gas Liquid-Measuring Devices be amended in like manner.

(The above item was adopted by voice vote.)

5. For the reason stated in item 3 above, the Committee also recommended the following amendments to the Code for Liquid-Measuring devices:

Renumber paragraphs S.2.6. and S.2.6.1. as S.2.7. and S.2.7.1

Add new specification paragraphs as follows:

S.2.6. FOR WHOLESALE DEVICES EQUIPPED WITH AUTOMATIC TEMPERATURE COMPENSATORS.

S.2.6.1. AUTOMATIC TEMPERATURE COMPENSATION.—A device may be equipped with an adjustable automatic means for adjusting the indication and registration of the measured volume of product to the volume at 60° F.

S.2.6.3. PROVISION FOR SEALING AUTOMATIC TEMPERATURE COMPENSATOR.—Provision shall be made for applying security seals in such a manner that an automatic temperature-compensating system cannot be disconnected and that no adjustment may be made to the system.

S.2.6.4. THERMOMETER WELL WITH AUTOMATIC TEMPERATURE COMPENSATION.—Means shall be provided for inserting, for test purposes, a mercury-in-glass thermometer either

(a) in the liquid chamber of the meter, or

(b) in the meter inlet or discharge line and immediately adjacent to the meter.

S.4.3.2. TEMPERATURE COMPENSATION.—If a device is equipped with an automatic temperature compensator, the primary indicating elements, recording elements, and recorded representation shall be clearly and conspicuously marked to show that the volume delivered has been adjusted to the volume at 60° F.

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Add the following sentence to notes paragraph N.4.1. NORMAL TESTS:

If a wholesale device is equipped with an automatic temperature compensator, this test should be conducted with the temperature compensator disconnected.

Add the following new notes paragraphs:

N.4.1.1. AUTOMATIC TEMPERATURE COMPENSATION ON WHOLESALE DEVICES.—If a device is equipped with an automatic temperature compensator, the compensator shall be tested by comparing the volume indicated or recorded by the device with the compensator connected and operating, with the actual delivered volume corrected to 60 °F.

N.5. TEMPERATURE CORRECTION ON WHOLESALE DEVICES WITH AUTOMATIC TEMPERATURE COMPENSATION.—Corrections shall be made for any changes in volume resulting from the differences in liquid temperatures between time of passage through the meter and time of volumetric determination in the test measure.

Amend tolerance paragraph T.1.1. as follows:

T.1.1. TO UNDERREGISTRATION AND TO OVERREGISTRATION.—The tolerances hereinafter prescribed shall be applied to errors of underregistration and errors of overregistration, whether or not a device is equipped with an automatic temperature compensator.

Add new user requirement UR.3.5. as follows:

UR.3.5. AUTOMATIC TEMPERATURE COMPENSATOR ON WHOLESALE DEVICES.—If a wholesale device is equipped with an automatic temperature compensator, this shall be connected, operable, and in use at all times. Such automatic temperature compensator may not be removed, nor may a compensated device be replaced with an uncompensated device, without the written approval of the weights and measures authority having jurisdiction over the device.

(The foregoing amendments relating to wholesale devices equipped with automatic temperature compensators were adopted by voice vote.)

The Committee wishes to acknowledge that it has received a proposal from the Meter Manufacturers' Technical Committee to study the need for changing the tolerances on temperature-compensated wholesale

devices that are now covered by the new paragraphs added to the Code for Liquid-Measuring Devices. The Committee will give its full consideration to this proposal in the coming year.

CODE FOR VEHICLE-TANK METERS

1. A New York City weights and measures official proposed the following new specification paragraph to the Code for Vehicle-Tank Meters:

S.1.4.4. ZERO-SET-BACK INTERLOCK.—A vehicle-tank meter shall be so constructed that, after a particular delivery cycle has been completed by movement of the starting lever to its shut-off position, or by the completion of the printing process of the meter print head attached to the meter system, an effective automatic interlock will prevent a subsequent delivery being started until the indicating elements have been returned to their correct zero position.

The Committee gave this proposal very careful consideration and heard the views of other weights and measures officials and representatives of meter manufacturers and the industry. Although there is some sentiment for the intent of such a requirement among weights and measures officials, it is generally agreed that the adoption of the specification is not feasible at this time, due to the considerable increase in costs that it would create, the lack of nationwide availability of needed equipment to effectuate compliance, and other factors.

The Committee is of the opinion that time is needed to fully study the impact of this proposal and to await further developments within the industry. Thus, the Committee recommended no action at this time.

During discussion on this item on Monday during the open committee meeting, a weights and measures official requested that the Committee study the problem of vehicle-tank meters used in aircraft fueling operations. This matter was placed on the Committee's agenda for future consideration.

DISCUSSION ON FOREGOING ITEM

Mr. M. Greenspan: It was I who made the original request to the Committee to consider the proposed specification for zero-set-back interlocks on vehicle-tank meter installations. I have discussed this proposal with many weights and measures officials, and they have agreed that such a specification would be worthwhile. I would like to briefly review my reasons for making the request to the Committee.

Perhaps we, in the Northeast, are a bit more concerned with this problem because of the vast amount of fuel oil and other petroleum

products, including solvents and chemicals, that are delivered in metered vehicles. It is open knowledge, but never openly admitted by a large part of the fuel-oil trade, that there is a lack of control over operators who may be diverting product from regular customers and peddling the product on their own while charging this diverted quantity to the regular customers.

It is true that there are laws and regulations prohibiting such practices. Many such laws have provisions for several criminal penalties, but, because of the scope and complexity of obtaining proper evidence, it is extremely difficult, in fact almost impossible, to successfully prosecute.

To cope with this situation, a bill has been introduced in the legislature of the State of New Jersey that requires a zero-set-back interlock for all vehicle meters used in the delivery of petroleum products. The City of New York can, either by home rule legislation or by regulation, adopt a similar requirement. But the problem is much greater than that affecting these two jurisdictions. Many of the delegates I have spoken to regarding this matter have agreed that the proposed addition to H–44 is desirable. The proposal is neither new nor radical. We have such specifications in both the Liquid-Measuring Device Code (S.2.5.1.) and in the LPG Liquid-Measuring Device Code (S.2.7.1.).

At the open meeting on Monday I furnished the Committee with record of four patents for such devices. There are two additional devices patented. Prototypes of four devices have been manufactured and put into service with varying degrees of success. The cost of these devices ranges from about $150 to $300. This cost, when compared to the cost of a new vehicle, which ranges from about $18,000 to $35,000, in the opinion of many people is not excessive in view of the seriousness of the problem.

I must agree with the Committee's position as to the lack of nationwide availability of needed equipment to effectuate compliance. However, if such a specification were passed as a tentative specification, to become effective for all new vehicles, let us say, July 1974, five years hence, and July 1978 for old vehicles, industry would be stimulated to do additional research on the problem. I have also discussed this with representatives of two different meter manufacturers, and they were in agreement with my position.

I, therefore, move that the Committee on Specifications and Tolerances review the request for the inclusion of the proposed specification in Handbook 44 in consideration of the above statement and report its findings to the next National Conference on Weights and Measures.

(The foregoing item including Mr. Greenspan's motion was adopted by voice vote.)

2. *Specification paragraph S.3.6. ANTIDRAIN VALVE.*—Officials in the State of Virginia brought attention to a problem that they had experienced concerning specification paragraph S.3.6. It appeared that the second sentence in this paragraph needed clarification to clear up doubt regarding the type of valve referred to as being adjacent to the meter. Accordingly, the Committee recommended that this paragraph be amended to read as follows:

S.3.6. ANTIDRAIN VALVE.—In a wet-hose, pressure-type device, an effective antidrain valve shall be incorporated in the discharge valve or immediately adjacent thereto. The antidrain valve shall function so as to prevent the drainage of the discharge hose when an automatic valve adjacent to the meter is closed following the delivery of a predetermined volume of liquid. However, a device used exclusively for fueling and defueling aircraft may be of the pressure type without an antidrain valve.

(The foregoing item was adopted by voice vote.)

CODE FOR LIQUEFIED PETROLEUM GAS LIQUID-MEASURING DEVICES

1. *Specification paragraph S.2.6.1. PROVISION FOR DEACTIVATING.*—Meter manufacturers pointed out to the Committee that, in certain installations, meters are equipped with two separate indicating elements, one indicating deliveries in terms of uncompensated volume, the second indicating deliveries in terms of volume compensated to 60 °F. In the case of such installations, there obviously is no need for a method of deactivating the temperature compensator, such as is required by this specification paragraph as it is now worded.

The Committee, therefore, recommended in its tentative report that specification paragraph S.2.6.1. be amended to read as follows:

S.2.6.1. PROVISION FOR DEACTIVATING.—Except in the case of a device equipped with two indicating elements, or two recording elements, one designed to indicate, or record, in terms of uncompensated gallons and the other designed to indicate, or record, in terms of gallons compensated to 60 °F, provision shall be made to facilitate the deactivation of the automatic temperature-compensating mechanism from the metering system, so that the meter may indicate, and record if it is equipped to record, in terms of the uncompensated volume.

In order to avoid the inference that a device may be equipped to record only, with no primary indicator, the Committee recommended that this paragraph be amended as per the amendatory language

recorded in item 3, specification paragraph S.2.6.2., of the Liquid-Measuring Device Code as follows:

S.2.6.1. PROVISION FOR DEACTIVATING.—Except in the case of a device equipped with two indicating elements, or two recording elements, one designed to indicate, or record if it is equipped to record, in terms of uncompensated gallons and the other designed to indicate, or record if it is equipped to record, in terms of gallons compensated to 60 °F, provision shall be made to facilitate the deactivation of the automatic temperature-compensating mechanism from the metering system, so that the meter may indicate, and record if it is equipped to record, in terms of the uncompensated volume.

Weights and measures officials have brought to the Committee's attention the use in commercial service of LPG liquid-measuring devices of the temperature-compensating type that are so designed that the compensating mechanism cannot be "deactivated," as is required by this specification. The manufacturers of such devices claim that zero-compensation deliveries can be made by immersing a "bulb" in liquid maintained at 60 °F.

It is the view of the Committee that such a design represents a circumvention of the requirement, and that field tests of such devices in terms of uncompensated volume are, at best, extremely difficult technically. During discussions with the Committee, representatives of manufacturers pointed out that general user requirement G–UR.4.3. ASSISTANCE IN TESTING OPERATIONS might be applied by the official in the test of these meters. This General Code requirement stipulates that "if the design, construction, or location of any device is such as to require a testing procedure involving special equipment or accessories or an abnormal amount of labor. such equipment, accessories, and labor shall be supplied by the owner or operator of the device as required by the weights and measures official." The Committee takes no position on this point. If the manufacturer or user of a meter with a design such as is discussed here does supply special equipment to facilitate the test at zero compensation and such special equipment makes possible a precise test of the device, the official must reach his own conclusion as to appropriateness.

Regardless, the Committee urges manufacturers to design so as to meet *all* code requirements without compromise.

(The foregoing item was adopted by voice vote.)

2. In keeping with its announced plan of recent years, the Committee reviewed existing nonretroactive requirements in the LPG Code that have been in effect for 10 years or more to determine the appropriateness of changing such requirements to retroactive status.

Accordingly, the Committee recommended that the following specification paragraphs be changed from nonretroactive status to retroactive status.

S.1.4.1. INDICATION OF DELIVERY.

S.2.5. THERMOMETER WELL.

S.3.1. DIVERSION OF MEASURED LIQUID.

(The foregoing item was adopted by voice vote.)

3. The Committee received a suggestion that a requirement similar to UR.2.2. in the Code for Vehicle-Tank Meters also should be included in the LPG Code. The Committee agreed that a requirement to prohibit ticket riding on LP Gas trucks is just as important as prohibiting this practice on vehicle-tank meters.

Thus, the Committee recommended the addition of the following user requirement paragraph:

UR.2.6. TICKET IN PRINTING DEVICE.—A ticket shall not be inserted into a device equipped with a ticket printer until immediately before a delivery is begun, and in no case shall a ticket be in the device when the vehicle is in motion.

(The foregoing item was adopted by voice vote.)

CODE FOR VEHICLE TANKS USED AS MEASURES

The Committee reviewed existing nonretroactive requirements in the Code for Vehicle Tanks Used as Measures that have been in effect for 10 years or more to determine appropriateness of changing such requirements to retroactive status.

Accordingly, the Committee recommended that the following specification paragraphs be changed from nonretroactive status to retroactive status:

S.1.4. FILL OR INSPECTION OPENING.

S.2.4. POSITION.

S.3. DESIGN OF COMPARTMENT DISCHARGE MANIFOLD.

[NOTE: The date of 1960 shown in brackets following each of these paragraphs in the handbook does not apply to the language, but rather to the fact that these paragraphs were reorganized and renumbered as separate paragraphs in 1960.]

(The foregoing item was adopted by voice vote.)

The Bureau of Weights and Measures, State of Pennsylvania, proposed several amendments to the Farm Milk Tank Code that it contended would correct certain deficiencies. The major problem encountered by officials in Pennsylvania involves the failure of tanks to conform with requirements pertaining to level-indicating means and level conditions.

The Committee also received a request from Mr. John Marshall, National Association of Food and Dairy Equipment Manufacturers, to consider a proposal for the amendment of the code that would more adequately cover the very large capacity tanks.

As a result of these two proposals, the Committee recommended that the Code for Farm Milk Tanks be amended as follows:

1. Renumber and relocate paragraph S.2.2. PORTABLE TANK to S.2.3.

2. Renumber paragraph S.2.3. to S.2.2.

3 Renumber and amend paragraph S.2.3.1. as follows:

S.2.2.1. ON A STATIONARY TANK.—A stationary tank shall be provided with such level-indicating means as a two-way or circular level, a plumb bob, two-way leveling lugs, or the like; or the top edge or edges of the tank shall be so constructed throughout as to provide an accurate reference for level determinations: Provided, *That when leveling lugs or the top edge or edges of the tank are utilized as the reference for level determinations, there shall be supplied with the tank a sensitive spirit level of appropriate dimensions, and the positions where such level is intended to be used shall be permanently marked on the reference surface of the tank:* And provided further, *That when leveling lugs are used they shall be so designed, constructed, and installed at the factory that any alteration of the original position or condition, such as by hammering or filing, would be difficult and would become obvious.* A stationary tank with a nominal capacity of 500 gallons or greater shall be provided with at least two similar level-indicating means, *and these shall be located in opposite and distant positions from each other so as to facilitate an accurate level determination in both directions of the tank's horizontal plane.*

4. Renumber and amend paragraph S.2.3.2. as follows:

S.2.2.2. ON A PORTABLE TANK.—A portable tank shall be provided with either a two-way or a circular level.

5. Amend paragraph S.3.5.3. by deleting the word "and" from the end of (b), changing (c), and adding a new (d) and (e) as follows:

S.3.5.3. VALUE OF GRADUATED INTERVAL.—The value of a graduated interval on a gage rod or surface gage (exclusive of the interval from the bottom of the tank to the lowest graduation) shall not exceed

(a) ½ gallon for a tank of a nominal capacity of 250 gallons or less,

(b) 1 gallon for a tank of a nominal capacity of 251 to 500 gallons, inclusive,

(c) 1½ gallons for a tank of a nominal capacity of 501 to 1500 gallons, inclusive,

(d) 2 gallons for a tank of a nominal capacity of 1501 to 2500 gallons, inclusive, and

(e) add 1 gallon for each 2500 gallons or fraction thereof of nominal tank capacity above 2500 gallons.

6. Amend paragraph S.6. as follows:

S.6. IDENTIFICATION.—A tank and any gage rod, surface gage, spirit level, and gallonage chart intended to be used therewith shall be mutually identified, as by a common serial number, in a prominent and permanent manner.

7. Amend paragraph T.3. BASIC TOLERANCE VALUES, Table 1, as follows:

Table 1.—BASIC MAINTENANCE AND ACCEPTANCE TOLERANCES FOR FARM MILK TANKS

Nominal capacity of tank	Tolerance in excess and in deficiency
Gallons	*Gallons*
250 or less	½
251 to 500, incl	1
501 to 1,500, incl	3
1,501 to 2,500, incl	4
2,501 to 5,000, incl	6
Over 5,000	Add 2 gallons per 2,500 gallons or fraction thereof.

8. Add new user requirement paragraph UR.2.1.1. as follows:

UR.2.1.1. LEVELING LUGS.—If leveling lugs are provided on a stationary tank, such lugs shall not be hammered or filed to establish or change a level condition of the tank.

9. *General comment.*—Farm milk tank manufacturers are receiving requests to produce tanks of increasingly greater capacity, some now ranging as high as 10,000 gallons, and indications are that they probably will go higher in the future. This development could pose a problem concerning the design of reading elements of a farm milk tank. The present Handbook 44 code provides for only the use of a gage rod or surface gage as a means of reading the liquid level in a tank. Such means may not be practical for tanks of very large capacity as mentioned above. One manufacturer has proposed the use of a sight glass and graduated scale as reading elements. Some doubt prevails as to the suitability of a sight glass as an accurate and repeatable means for liquid level determinations. A thorough study of a sight glass design and its performance would be necessary in order to determine its acceptability for inclusion in the code. This matter deserves very careful consideration by both manufacturers and weights and measures officials. If a study is deemed advisable, the Office of Weights and Measures, National Bureau of Standards, would be glad to cooperate in this effort. Manufacturers may decide that none of the above-mentioned means for determining the volume of milk in large farm milk tanks is appropriate and that research should be employed to find a new and more sophisticated means for volume determination. The Committee on Specifications and Tolerances of the National Conference on Weights and Measures will await developments by manufacturers in this regard.

(The foregoing items relating to the Code for Farm Milk Tanks were adopted by voice vote.)

CODE FOR MEASURE-CONTAINERS

The Committee was made aware of problems that result from the use of measure-containers as packages. The confusion occurs when a measure-container, marked to indicate its capacity in terms of volume, is used as a package in an over-the-counter sale of a commodity sold by weight.

To correct this and to clarify certain other requirements, the Committee recommended the following amendments to the code:

1. Amend application paragraph A.1. to read:

A.1. GENERAL.—This code applies to measure-containers, including lids or closures if such are necessary to provide total enclosure of the measured commodity as follows:

(a) Retail measure-containers intended to be used only once to determine at the time of retail sale, and from bulk supply, the quantity of commodity on the basis of liquid measure. The retail measure-container serves as the container for the delivery of the commodity.

(b) Prepackaged measure-containers intended to be used only once to determine in advance of sale the quantity of a commodity (such as ice cream, iced milk, sherbet, sour cream, or yoghurt) on the basis of liquid measure. The prepackaged measure-container serves as the container for the delivery of the commodity, in either a wholesale or a retail marketing unit.

This code does not apply to rigid containers used for milk, cream, or other fluid dairy products, which are covered by the Code for Milk Bottles.

2. Amend specification paragraph S.2. CAPACITY POINT to read:

S.2. CAPACITY POINT.—The capacity of a measure-container shall be defined by

(a) the top edge,

(b) a line near the top edge, or

(c) the horizontal cross-sectional plane established by the bottom surface of the removable lid or cap when seated in the container.

3. Amend specification paragraph S.4.2. CAPACITY STATEMENT to read:

S.4.2. CAPACITY STATEMENT.—A measure-container shall be clearly and conspicuously marked with a statement of its capacity in terms of one of the units prescribed in S.1.1. or S.1.2.

4. Delete specification paragraphs S.4.2.1. LOCATION ON A CONTAINER WITH AN ATTACHED CLOSURE and S.4.2.2. LOCATION ON A CONTAINER WITH A REMOVABLE LID OR COVER.

(The foregoing items relating to the Code for Measure-Containers were adopted by voice vote.)

CODE FOR MILK BOTTLES

The Committee's attention was directed to a possible conflict between specification paragraph S.4.1. and the labeling requirements of Food and Drug Administration regulations issued under the Fair Packaging and Labeling Act.

The Committee accordingly recommended that specification paragraph S.4.1. be amended to read as follows:

S.4.1. CAPACITY.—A milk bottle shall be permanently marked with a statement of its capacity. ***The marking requirements shall relate to the placement of other written, printed, or graphic matter on the bottle as follows:***

(a) On bottles with no written, printed, or graphic matter, the

capacity statement shall be located at or above the shoulder of the bottle.

(b) On bottles with written, printed, or graphic matter, the capacity statement shall be located within the bottom 30 percent of the labeled area. **(1969)**

(The foregoing item was adopted by voice vote.)

CODE FOR LINEAR MEASURES

The Committee believes that manufacturers and users of linear tape measures have had adequate time to fully conform with specification paragraph S.2.1., as this requirement has been in effect in nonretroactive status for ten years.

Accordingly, the Committee recommended that paragraph S.2.1. FLEXIBLE TAPE be changed from nonretroactive to retroactive status.

(The foregoing item was adopted by voice vote.)

CODE FOR CORDAGE-MEASURING DEVICES

As reported during the 53d National Conference, a manufacturer of wire and cordage-measuring devices suggested that the Code for Cordage-Measuring Devices needed revision in at least three particulars: (1) The code should require that a wire or cordage-measuring device have marked clearly thereon limitations as to its use, particularly with respect to the types of cordage, rope, wire, or cable that can be accurately measured with it. (2) The code should stipulate that a device be tested with the materials it sets itself forth as being capable of measuring accurately and not be tested with a steel tape. (3) The code tolerances are unreasonably small and should be revised.

The Office of Weights and Measures recently completed its technical study of cordage-measuring devices. Eleven wire and/or cordage-measuring devices submitted by four suppliers were examined and used in the study. Thirty-two materials (24 wire and cable and 8 cordage) and a steel tape were measured on these devices by three operators.

As a result of this study, the Committee recommended that the code be amended as follows:

1. Amend the title to read: **WIRE AND CORDAGE-MEASURING DEVICES.**

2. The word **"wire"** should be added in conjunction with cordage-measuring devices wherever used in the code.

3. Amend paragraph S.1. UNITS by adding **"or feet and inches"** after the word "feet".

4. Amend paragraph S.2.3. RETURN TO ZERO by changing the title and deleting the second sentence, so that the paragraph will read as follows:

S.2.3. ZERO INDICATION.—Primary indicating elements shall be readily returnable to a definite zero indication.

5. Add new nonretroactive specification paragraph S.3.3. ACCESSIBILITY as follows:

S.3.3. ACCESSIBILITY.—A wire or cordage-measuring device shall be so constructed that the measuring elements are readily visible and accessible, without disassembly of any supporting frame or section of the main body, for purposes of cleaning or removing any foreign matter carried into the mechanism by the material being measured. **[1969]**

6. Amend paragraph N.1. TESTING MEDIUM to read as follows:

N.1. TESTING MEDIUM.—A wire or cordage-measuring device shall be tested with a steel tape not less than ½ inch in width and at least 50 feet in length. The tape shall have a smooth surface or intaglio figures and graduations (i.e., the figures and graduations shall not be raised). When a wire or cordage-measuring device cannot be tested in such a manner because of the design of the device, it shall be tested with a kink-free length of No. 12 vinyl-covered electrical wire appropriately marked and compared at frequent periodic intervals with a calibrated steel tape at various increments from 20 through 50 feet.

7. Add a new notes paragraph N.2. MINIMUM TEST to read as follows:

N.2. MINIMUM TEST.—Tests shall be conducted at a minimum initial increment of 20 feet and appropriate increments up to at least 50 feet.

8. Amend Table 1 as follows:

Table 1.—MAINTENANCE AND ACCEPTANCE TOLERANCES FOR WIRE AND CORDAGE-MEASURING DEVICES

Indication of device	Acceptance and maintenance tolerances	
	On underregistration	On overregistration
Feet	*Inches*	*Inches*
20	6	3
Over 20 to 30	8	4
Over 30 to 40	10	5
Over 40 to 50	12	6
Over 50	Add 2 inches per indicated 10 feet.	Add 1 inch per indicated 10 feet.

9. Add the following new user requirements:

UR.2.2. RETURN TO ZERO.—The primary indicating elements of a wire or cordage-measuring device shall be returned to zero before each measurement.

UR.2.3. OPERATION OF DEVICE.—A wire or cordage-measuring device shall not be operated in such a manner as to cause slippage or inaccurate measurement.

UR.2.4. CLEANLINESS.—The measuring elements of a wire or cordage-measuring device shall be kept clean to prevent build-up of dirt and foreign material that would adversely affect the measuring capability of the device.

(The foregoing items relating to the Code for Cordage-Measuring Devices were adopted by voice vote.)

CODE FOR BERRY BASKETS AND BOXES

The repeal of the Standard Container Act of 1916 produced a number of inquiries from weights and measures officials as to its impact on the Code for Berry Baskets and Boxes. The Committee is advised that the containers regulated by the code are still widely utilized in intrastate commerce, and that such containers, though now covered under the Fair Packaging and Labeling Act, are exempt from being labeled by a provision of the Food, Drug, and Cosmetic Act.

The Committee is of the opinion that to repeal the code at this time would be premature, that further study of its usefulness is warranted, and that a final recommendation will be presented to the 55th National Conference on Weights and Measures.

(The foregoing item was adopted by voice vote.)

TENTATIVE CODE FOR LIQUEFIED PETROLEUM GAS VAPOR-MEASURING DEVICES

The subject of liquefied petroleum gas vapor meters has been considered by the Conference on several occasions, dating as far back as the 35th National Conference. At the 49th National Conference the California program for the testing of these devices was presented, and in the same year a final revised version of an industry-formulated code was presented to the Office of Weights and Measures for study. The Office of Weights and Measures recently completed its investigation of vapor-meter accuracy, testing equipment, and testing procedures. In addition, vapor-meter test facilities of a public utility and the California Weights and Measures Laboratory were visited, and test procedures and problems discussed. On the basis of information thus obtained, a Tentative Code for Liquefied Petroleum Gas Vapor-Measuring Devices was prepared.

It should be noted that the tolerances as specified should apply only to meters tested with a bell prover. At the present time, no tolerances have been established for testing with a test meter.

The Committee recommended the adoption of the Tentative Code for Liquefied Petroleum Gas Vapor-Measuring Devices as set forth in its tentative report and amended in its final report, reading as follows:

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TENTATIVE CODE LIQUEFIED PETROLEUM GAS VAPOR-MEASURING DEVICES

(See Also General Code Requirements)

(This Tentative Code has only a trial or experimental status and is not intended to be rigidly enforced. The requirements are designed for observation and study prior to the development and final adoption of a Code for Liquefied Petroleum Gas Vapor-Measuring Devices.)

The Committee recommended that the following sentence be added to the above parenthetical statement:

It is not expected that all meters within a jurisdiction be tested within a year and put a burden on industry or weights and measures officials, but rather prorated over several years.

(This item was adopted by voice vote.)

A. APPLICATION. (Pertaining to the application of Code requirements.)

A.1. GENERAL—This code applies to devices used for the measurement of liquefied petroleum gas in the vapor state. This code does not apply to:

[Editor's note: See amendments to A.1. following S.1.1.3.]

(a) Liquid-measuring devices used for dispensing liquefied petroleum gases in liquid form (for which see Code for Liquefied Petroleum Gas Liquid-Measuring Devices).

(b) Natural and manufactured gas vapor meters when these are operated in a public utility system.

It was pointed out that there are LP Gas meters used in public utility systems which would not be subject to the requirements of this code. Accordingly, the Committee recommended that section (b) of application paragraph A.1. be amended to read as follows:

(b) Natural, liquefied petroleum, and manufactured gas vapor meters when these are operated in a public utility system.

(The foregoing item as amended was adopted by voice vote.)

S. SPECIFICATIONS. (Applicable with respect to the design of devices.)

S.1. DESIGN OF INDICATING AND RECORDING ELEMENTS AND OF RECORDED REPRESENTATIONS.

S.1.1. PRIMARY ELEMENTS.

S.1.1.1. GENERAL.—A device shall be equipped with a primary indicating element and may also be equipped with a primary recording element.

S.1.1.2. UNITS.—A device shall indicate, and record if the device is equipped to record, its deliveries in terms of cubic feet. A meter indicating or recording in units other than cubic feet must be clearly marked with the cubic-foot equivalent of said unit at some readily visible point on the meter. In the case of meters in use, this marking shall be placed on the meter prior to a retest.

The Committee stated in its final report that it felt that devices should indicate and record only in terms of cubic feet and recommended that paragraph S.1.1.2. be amended to read as follows:

S.1.1.2. UNITS.—A new device shall indicate, and record if the device is equipped to record, its deliveries in terms of cubic feet. All other meters indicating or recording in units other than cubic feet must be clearly marked with the cubic-foot equivalent of said unit at some readily visible point on the meter. This marking shall be placed on the meter prior to a retest.

However, the Committee was informed that the industry is measuring LP Gas Vapor in units other than cubic feet, as provided for in the report of the 35th National Conference on Weights and Measures. Therefore, the Committee recommended a further study of units used in the sale of this product, with the ultimate aim and orderly transition to expression in terms of cubic feet, and recommended that paragraph S.1.1.2. be held as in the tentative code.

(Paragraph S.1.1.2. was adopted by voice vote as it appeared in the tentative report.)

S.1.1.3. VALUE OF SMALLEST UNIT.—The value of the smallest unit of indicated delivery, and recorded delivery if the device is equipped to record, shall not exceed 100 cubic feet.

It was suggested that specification paragraph S.1.1.3. be deleted, since the limitation of 100 cubic feet is not practical in the case of large meters. The Committee believed that this paragraph should be retained in the code. However, it recommended that the first sentence of application paragraph A.1. should be amended so that the paragraph would read as follows:

A.1. GENERAL.—This code applies to positive displacement, low-pressure (less than 5 psi or less) devices used for the measurement of liquefied petroleum gas in the vapor state. This code does not apply to:

(The items relating to paragraphs S.1.1.3. and A.1. were adopted by voice vote.)

S.1.1.4. ADVANCEMENT OF INDICATING AND RECORDING ELEMENTS.—Primary indicating and recording elements shall advance digitally or continuously and be susceptible of advancement only by the mechanical operation of the device.

S.1.1.5. PROVING INDICATOR.—A device shall be equipped with a proving indicator measuring 1, 2, 5, or 10 cubic feet per revolution, depending on meter size for testing the meter. The test circle of the proving indicator shall be divided into ten equal parts. Additional subdivisions of one or more of such equal parts may be made.

S.1.2. GRADUATIONS.

S.1.2.1. LENGTH.—Graduations shall be so varied in length that they may be conveniently read.

S.1.2.2. WIDTH.—In any series of graduations, the width of a graduation shall in no case be greater than the width of the minimum clear interval between graduations, and in no case should it exceed 0.04 inches for indicating elements and 0.02 inches for proving circles.

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S.1.2.3. CLEAR INTERVAL BETWEEN GRADUATIONS.—The clear interval shall be not less than 0.04 inch. If the graduations are not parallel, the measurement shall be made

(a) along the line of relative movement between the graduations and the end of the indicator, or

(b) if the indicator is continuous, at the point of widest separation of the graduations.

S.1.3. INDICATORS.

S.1.3.1. SYMMETRY.—The index of an indicator shall be symmetrical with respect to the graduations with which it is associated and at least throughout that portion of its length that is associated with the graduations.

S.1.3.2. LENGTH.—The index of an indicator shall reach to the finest graduations with which it is used.

S.1.3.3. WIDTH.—The width of the index of an indicator in relation to the series of graduations with which it is used shall be not greater than

(a) the width of the widest graduation and

(b) the width of the minimum clear interval between graduations.

When the index of an indicator extends along the entire length of a graduation, that portion of the index of the indicator that may be brought into coincidence with the graduation shall be of the same width throughout the length of the index that coincides with the graduation.

S.1.3.4. CLEARANCE.—The clearance between the index of an indicator and the graduations shall in no case be more than 0.06 inch.

S.1.3.5. PARALLAX.—Parallax effects shall be reduced to the practicable minimum.

S.2. DESIGN OF MEASURING ELEMENTS.

S.2.1. PRESSURE REGULATION.—The vapor should be measured at a pressure of 11 inches of water. Where vapor is being measured at pressures in excess of or less than 11 inches of water, a volume multiplier shall be applied based on the following equation:

$$\text{Volume Multiplier} = \frac{\text{Atmospheric Pressure at Meter (PSIA)} + \text{Meter Gage Pressure (PSI)}}{\text{Base Pressure (PSIA)}}$$

A State official recommended that a tolerance of plus or minus 2.75 inches water column be applied to the delivery pressure. The Committee felt that this was a reasonable request and recommended that specification paragraph S.2.1. be amended to read as follows:

S.2.1. PRESSURE REGULATION.—The vapor should be measured at a pressure of 11 inches of water. Where vapor is being measured at pressures in excess of or less than 11 inches of water, a volume multiplier shall be applied based on the following equation:

$$\text{Volume Multiplier} = \frac{\text{Atmospheric Pressure at Meter (PSIA)} + \text{Meter Gage Pressure (PSI)}}{\text{Base Pressure (PSIA)}}$$

The delivery pressure should be within a tolerance of plus or minus 2.75 inches water column.

(The foregoing item as amended was adopted by voice vote.)

S.2.2. PROVISION FOR SEALING.—Adequate provision shall be made for applying security seals in such a manner that no adjustment may be made of any measurement element.

S.2.3. MAINTENANCE OF VAPOR STATE.—A device shall be so designed and installed that the product being measured will remain in a vapor state during passage through the meter.

S.2.4. AUTOMATIC TEMPERATURE COMPENSATION.—A device may be equipped with an adjustable automatic means for adjusting the indication and registration of the measured volume of vapor product to the volume at 60 °F.

S.2.5. CORRECTIONS FOR ALTITUDE.—A suitable multiplier table of corrections shall be used to correct for changes in the atmospheric pressure with respect to altitude. The multiplier for a particular installation shall be affixed on the front of the device near the badge.

The National LP Gas Association stated that the requirements of specification paragraph S.2.5. are vague and could cause confusion. It recommended that the paragraph be deleted, the heading retained, and a note added to read as follows: "Requirements being developed." On the other hand, this section has been vigorously supported by a State official. A table has been computed with U.S. standard atmospheric pressures to 16,000-foot elevations. The Committee recommended no change from the tentative report.

S.3. DESIGN OF DISCHARGE LINES AND SHUT-OFF VALVES.

S.3.1. DIVERSION OF MEASURED VAPOR.—No means shall be provided by which any measured vapor can be diverted from the measuring chamber of the meter or the discharge line therefrom.

S.3.2. SHUT-OFF VALVE.—The shut-off valve shall be located in the input line to the meter.

S.4. MARKING REQUIREMENTS.

S.4.1. LIMITATIONS OF USE.—If a device is intended to measure accurately only products having particular properties, or to measure accurately only under specific installation or operating conditions, or to measure accurately only when used in conjunction with specific accessory equipment, these limitations shall be clearly and permanently stated on the device.

It was suggested that it is impractical to state on the device all the limitations. Furthermore, the meter manufacturer is not aware of special applications. In light of application paragraph A.1. GENERAL, there is no need for measuring products having properties other than those associated with LP gases. The Committee felt that the code requirement is reasonable and recommended no change from the tentative report.

S.4.2. DISCHARGE RATES.—A device shall be marked to show its rated gas capacity (cubic feet per hour).

S.4.3. TEMPERATURE COMPENSATION.—If a device is equipped with an automatic temperature compensator, this shall be indicated on the badge or immediately adjacent to the badge of the device and on the register.

S.4.4. BADGE.—A badge affixed in a prominent position on the front of the device shall show the manufacturer's name, serial number, and model number of the device, and capacity rate of the device for the particular products that it was designed to meter as recommended by the manufacturer.

N. NOTES. (Applicable with respect to the testing of devices.)

N.1. TEST MEDIUM.—The device shall be tested with air.

N.2. TEMPERATURE AND VOLUME CHANGE.—Care should be exercised to reduce to a minimum any volume changes. The temperature of the air, bell-prover oil, and the meters under test should be within 2 °F of one another. The devices should remain in the proving room for at least 16 hours before starting any proving operations to allow the device temperature to approximate the temperature of the proving device.

It was stated that in some cases meters will be stabilized in temperature in three hours, while under other conditions it may require 36 hours or more. Thus, it was suggested that a more direct way to apply this specification would be to specify a maximum temperature differential between the air in the bell prover and the meter under test. The Committee felt that the present requirements are sufficient and recommended no change in the tentative report.

N.3. TEST DRAFTS.—Test drafts should be at least equal to one complete revolution of the largest capacity proving indicator, and shall in no case be less than 2 cubic feet. All flow rates should be controlled by suitable outlet orifices.

N.4. TEST PROCEDURES.

N.4.1. NORMAL TESTS.—The "normal" test of a device shall be made at the maximum discharge rate that may be anticipated under the conditions of installation. The maximum discharge rate shall not exceed the capacity rate given on the badge of the meter.

It was suggested that the wording in this paragraph is ambiguous. The Committee concurred and recommended that paragraph N.4.1. be amended to read as follows:

N.4.1. NORMAL TESTS.—The normal test of a device shall be made at the capacity rate given on the badge of the meter.

(The foregoing item as amended was adopted by voice vote.)

N.4.1.1. AUTOMATIC TEMPERATURE COMPENSATION.—If a device is equipped with an automatic temperature compensator, the proving-device reading shall be corrected to 60° F.

N.4.2. SPECIAL TESTS.—"Special" tests, to develop the operating characteristics of a device, and any special elements and accessories attached to or associated with the device, shall be made as circumstances require. Any test except as set forth in N.4.1. is a special test.

N.4.2.1. SLOW TEST.—The device shall be tested at 20 percent of the marked capacity rate, or the check rate if marked on the device, whichever is less.

N.4.2.2. LOW FLAME TEST.—The device shall be tested at an extremely low flow rate based upon $\frac{1}{10}$ percent of the rated capacity of the device as given in table 1.

It was suggested that this paragraph be made more compatible with table 1 by deleting the words "based upon $\frac{1}{10}$ percent of the rated capacity of the device." The Committee accordingly recommended that notes paragraph N.4.2.2. be amended to read as follows:

N.4.2.2. LOW FLAME TEST.—The device shall be tested at an extremely low flow rate as given in table 1.

(The foregoing item as amended was adopted by voice vote.)

Table 1.—CAPACITY OF LOW FLOW TEST RATE ORIFICES WITH RESPECT TO DEVICE CAPACITY

Rated LP Gas capacity	Low flow test rate
Up to and including 250 CFH.	¼ CFH.
Over 250 CFH, up to and including 500 CFH.	½ CFH.
Over 500 CFH	1/10 percent of capacity rate.

N.4.2.3. LEAK TEST AND REGISTER CHECK.—Each device shall be checked for leakage by immersion, while under an air pressure of 4.5 psi ± 0.5 psi gage, in a clear water bath. During the leak test, the meter register shall be removed. The operation of the meter register shall be manually checked for binding.

A spokesman for the industry requested the deletion of this paragraph, since this is a repair-shop operation with tin case meters, and the addition of a user requirement to cover the installation and maintenance of a pressure-tight and leak-proof metering system. The Committee recommended the deletion of paragraph N.4.2.3. and the addition of the following user requirement paragraph:

UR.1.2. LEAKAGE.—The metering system shall be installed and maintained as a pressure-tight and leak-free system.

(The deletion of paragraph N.4.2.3. and the addition of UR.1.2. were adopted by voice vote.)

N.5. TEMPERATURE CORRECTION.—Corrections shall be made for any changes in volume resulting from the difference in air temperatures between time of passage through the device and time of volumetric determination in the proving device.

N.6. FREQUENCY OF TEST.—A liquefied petroleum gas vapor-measuring device shall be allowed to remain in service for 10 years from the time last tested without being retested, unless a test is requested by:

(a) the purchaser of the product being metered,
(b) the seller of the product being metered, or
(c) the weights and measures official.

The National LP Gas Association stated (a) that a requirement should be added to stipulate that all meters should be tested before installation, (b) that some provision should be made to allow an orderly progression of testing to complete the testing program for older meters in a reasonable amount of time without putting a burden on

both weights and measures departments and industry, and (c) that a meter be allowed to remain in service for a period of 20 years before retesting, except for the three conditions as specified in the code.

The Committee recommended a change in the wording of notes paragraph N.6. to read as follows:

N.6. FREQUENCY OF TEST.—A liquefied petroleum gas vapor-measuring device shall be tested before installation and allowed to remain in service for 10 years from the time last tested without being retested, unless a test is requested by:

(a) the purchaser of the product being metered,

(b) the seller of the product being metered, or

(c) the weights and measures official.

However, the Committee feels that an orderly progression of testing is covered in the parenthetical statement appearing at the beginning of the code and that a ten-year period before retesting be retained. The industry will try to accumulate additional data to strengthen its contention concerning longer periods between tests.

(The foregoing item as amended was adopted by voice vote.)

T. TOLERANCES. (Applicable with respect to the performance of devices.)

T.1. TOLERANCE VALUES.—Maintenance and acceptance tolerances for liquefied petroleum gas vapor-measuring devices shall be as follows:

T.1.1. ON NORMAL TESTS.—The acceptance and maintenance tolerances on "normal" tests shall be 0.030 cubic foot per indicated cubic foot on underregistration and 0.015 cubic foot per indicated cubic foot on overregistration.

T.1.2. ON SPECIAL TESTS.—The acceptance and maintenance tolerances shall be 0.030 cubic foot per indicated cubic foot on underregistration and 0.015 cubic foot per indicated cubic foot on overregistration on the slow test. On the low-flame test the acceptance and maintenance tolerances shall be 0.20 cubic foot per indicated cubic foot on underregistration and 0.10 cubic foot per indicated cubic foot on overregistration.

It was recommended that the tolerances be also given by percentage and proof as used by the vapor meter industry. The Committee was of the opinion that this was a reasonable request and recommended that these paragraphs be amended to read as follows:

T.1.1. ON NORMAL TESTS.—The acceptance and maintenance tolerances on "normal" tests shall be 0.030 cubic foot per indicated

cubic foot (3 percent or 1.03 proof) on underregistration and 0.015 cubic foot per indicated cubic foot (1.5 percent or 0.985 proof) on overregistration.

T.1.2. ON SPECIAL TESTS.—The acceptance and maintenance tolerances shall be 0.030 cubic foot per indicated cubic foot (3 percent or 1.03 proof) on underregistration and 0.015 cubic foot per indicated cubic foot (1.5 percent or 0.985 proof) on overregistration on the slow test. On the low-flame test the acceptance and maintenance tolerances shall be 0.20 cubic foot per indicated cubic foot on underregistration and 0.10 cubic foot per indicated cubic foot on overregistration.

(The foregoing items as amended were adopted by voice vote.)

UR. USER REQUIREMENTS. (Applicable with respect to the installation and use of devices.)

UR.1. INSTALLATION REQUIREMENTS.

UR.1.1. CAPACITY RATE.—A device shall be so installed that the actual maximum flow rate will not exceed the capacity rate. If necessary, means for flow regulation shall be incorporated in the installation, in which case this shall be fully effective and automatic in operation.

It was suggested that paragraph UR.1.1. was overly restrictive and and did not provide for short periods of overload. The Committee reconsidered and recommended that the first sentence be amended so that the paragraph would read as follows:

UR.1.1. CAPACITY RATE.—A device shall be so installed that the actual maximum flow rate will not exceed the capacity rate except for short durations. If necessary, means for flow regulation shall be incorporated in the installation, in which case this shall be fully effective and automatic in operation.

(The foregoing item as amended was adopted by voice vote.)

UR.2. USE REQUIREMENTS.

UR.2.1. AUTOMATIC TEMPERATURE COMPENSATION.—A compensated device may not be replaced with an uncompensated device without the written approval of the weights and measures authority having jurisdiction over the device.

DEFINITIONS OF TERMS LIQUEFIED PETROLEUM GAS VAPOR-MEASURING DEVICES

The terms defined here have a special and technical meaning when used in the Code for Liquefied Petroleum Gas Vapor-Measuring Devices. Whenever a defined term is used in the LPG Vapor Code, it has the particular meaning given here.

atmospheric pressure. The average atmospheric pressure agreed to exist at the meter at various ranges of elevation, irrespective of variations in atmospheric pressure from time to time.

badge. A metal plate affixed to the meter by the manufacturer showing the manufacturer's name, serial number and model number of the meter, and its rated capacity.

base pressure. The absolute pressure used in defining the gas measurement unit to be used, and is the gage pressure at the meter plus an agreed atmospheric pressure.

bell prover. A calibrated cylindrical metal tank of the annular type with a scale thereon which, in the downward travel in a surrounding tank containing a sealing medium, displaces air through the meter being proved or calibrated.

check rate. A rate of flow usually 20 percent of the capacity rate.

cubic-foot bottle. A metal bottle open at the lower end and so supported that it may be easily raised or lowered in a tank which contains a sealing medium. With the level of the sealing medium properly adjusted, the bottle, when lowered, will displace exactly one cubic foot of air upon coming to rest on the bottom of the tank. The marks on the bottle defining the cubic foot are the bottom of the lower neck and the gage mark which partially surrounds the gage glass in the upper neck.

gage pressure. The difference between the pressure at the meter and the atmospheric pressure (psi).

liquefied petroleum gas. A petroleum product composed predominantly of any of the following hydrocarbons or mixtures thereof: propane, propylene, butanes (normal butane or isobutane), and butylenes.

liquefied petroleum gas vapor-measuring device. A system including a mechanism or device of the meter type, equipped with a totalizing index, designed to measure and deliver liquefied petroleum gas in the vapor state by definite volumes, and generally installed in a permanent location. The meters are similar in construction and operation to the conventional natural and manufactured gas meters.

low flame test. A test simulating extremely low-flow rates such as caused by pilot lights.

meter register. An observation index for the cumulative reading of the gas flow through the meter. In addition there are one or two proving circles in which one revolution of the test hand represents ½, 1, 2, 5, or 10 cubic feet, depending on meter size. Where two proving circles are present, the circle representing the smallest volume per revolution is referred to as the "leak-test circle."

portable cubic-foot standard. A gasometer of the annular type, the bell being sealed with a light oil, the amount of its rise (and consequently of the volume of air of gas being measured) being under absolute control so that an exact cubic foot can be delivered.

prover oil. A light oil of low vapor pressure used as a sealing medium in bell provers, cubic-foot bottles, and portable cubic-foot standards.

proving indicator. The test hand or pointer of the proving or leak-test circle on the meter register or index.

rated capacity. The rate of flow in cubic feet per hour of a liquefied petroleum gas vapor-measuring device as recommended by the manufacturer. This rate of flow should cause a pressure drop across the meter not exceeding ½-inch water column.

standard cubic foot. The unit of measurement of liquefied petroleum gas vapor at 60° F and 14.73 psia.

(The Tentative Code for Liquefied Petroleum Gas Vapor-Measuring Devices, as amended, was adopted by voice vote.)

GENERAL

The Committee desires to state formally its appreciation to all who have participated in its deliberations since the 53d National Conference, either through correspondence or in person during the interim meeting or during the open committee meeting held on Monday, June 9.

The Committee needs and appreciates the full cooperation of weights and measures officials and representatives of business and commercial interests. Further, the Committee recognizes that, as weights and measures technology becomes more complicated and sophisticated, true progress will result only from the complete cooperation of all concerned.

It is the desire of the Committee in this report to record its sincere appreciation to its former secretary, M. W. Jensen, whose technical guidance and able leadership have been unsurpassed in furthering the progress of weights and measures administration throughout the Nation.

H. D. Robinson, *Chairman*
D. E. Konsoer
J. C. Mays
R. Rebuffo
R. L. Thompson
H. F. Wollin, *Secretary*

Committee on Specifications
and Tolerances

(Mr. Rebuffo moved for adoption, and after a second from the floor, the report of the Committee on Specifications and Tolerances as amended was adopted in its entirety by the Conference by voice vote.)

(On motion of the committee chairman, seconded from the floor, the Conference by voice vote authorized the National Bureau of Standards to make any appropriate editorial changes in the language adopted by the Conference, so long as the principles thus adopted are strictly adhered to.)

REPORT OF THE CONFERENCE COMMITTEE ON LAWS AND REGULATIONS

Presented by J. F. Lyles, *Acting Chairman, Supervisor, Weights and Measures Regulatory Section, Division of Regulatory Services, State of Virginia*

(Thursday, June 12, 1969)

The Committee on Laws and Regulations submits its report to the 54th National Conference on Weights and Measures. The report consists of the tentative report, transmitted in April as part of the Conference Announcement as amended by the final report.

The report represents recommendations of the Committee that have been formed on the basis of written and oral comments received during the year and oral representations made during open meeting of the Committee. All recommended amendments are to appropriate provisions of the Model State Law on Weights and Measures and of the Model State Packaging and Labeling Regulation.

1. THE MODEL STATE LAW ON WEIGHTS AND MEASURES

SECTION 4. STATE STANDARDS OF WEIGHT AND MEASURE and SECTION 5. FIELD STANDARDS AND EQUIPMENT.—With the creation and development of the State standards laboratories as part of the new State Standards Program, "time interval" requirements in sections 4 and 5 for approval of State standards will now be superfluous and should be deleted. Under the program, the State laboratory technologists will be in the best position to know how often such certification of the standards is necessary. With these changes, the two sections will read as follows:

SEC. 4. STATE STANDARDS OF WEIGHT AND MEASURE.—Such weights and measures in conformity with the standards of the United States as have been supplied to the State by the Federal Government or otherwise obtained by the State for use as State standards shall, when the same shall have been approved as being satisfactory for use as such by the National Bureau of Standards, be the State standards of weight and measure. The State standards shall be kept in a safe and suitable place in the laboratory of the State Division of Weights and Measures and shall not be removed from the said laboratory except for repairs or for calibration and approval.

SEC. 5. FIELD STANDARDS AND EQUIPMENT.—In addition to the State standards provided for in section 4 of this Act, there shall be supplied by the State such "field standards" and such equipment as may be found necessary to carry out the provisions of this Act. The field standards shall be verified upon their initial receipt and, thereafter, as deemed necessary by the Director by comparison with the State standards.

(The foregoing amendments were adopted unanimously by voice vote.)

SECTION 29. SAME: ADVERTISING PACKAGES FOR SALE.—The advertising of lawn products in terms of square footage covered rather than in terms of weight has become an increasingly prevalent practice, both in newspaper advertisements and in promotional material at point of sale. This is in violation of section 29. SAME: ADVERTISING PACKAGES FOR SALE, that "whenever a commodity in package form is advertised in any manner and the retail price of the package is stated in the advertisement, there shall be closely and conspicuously associated with such statement of price a declaration of the basic quantity of contents of the package as is required by law or regulation to appear on the package."

Lawn care products (with the exception of peat moss, humus, and similar soil conditioners) are required to be sold by weight *or by fluid*

measure and should be advertised in terms of weight *or fluid measure.* The Committee reaffirms once more its support of Section 29 and urges manufacturers of lawn care products to advertise and sell such products in terms of weight *or fluid measure.*

(The foregoing item was adopted unanimously by voice vote.)

SECTION 32. MEAT, POULTRY, AND SEAFOOD.—The United States Department of Agriculture regulations for stuffed poultry products require both total net weight, and, in proximity thereto, minimum weight of poultry to appear on the label.

Section 32 conflicts with this requirement in requiring only a total quantity statement for such products. It is suggested that Section 32 be amended to agree with the USDA requirement by adding the following proviso:

***Provided,* That for ready-to-cook, whole carcass stuffed poultry, ready-to-cook stuffed poultry roasts, rolls, bars, and logs, and ready-to-cook stuffed poultry products designated by terms of similar import, the label must show the total net weight of the poultry product and in proximity thereto, a statement specifying the minimum weight of poultry in the product.**

(The foregoing amendment was adopted unanimously by voice vote.)

SECTION 39. TEXTILE PRODUCTS.—At last year's Conference the delegates voted unanimously to delete section 39, *TEXTILE PRODUCTS*, from the Model State Law on Weights and Measures because a number of the requirements in section 39 were in conflict with the new requirements brought about by enactment of the Fair Packaging and Labeling Act and because all textile products in packaged form are now covered by the regulation issued by the Federal Trade Commission.

It has come to the attention of the Committee that a representative of the textile industry has been making efforts within individual States to have this section retained in the State statute even though this section, as the Committee has pointed out, is in conflict with preemptive Federal requirements. The Committee deplores this effort to preserve a position of nonuniformity and further urges that all parties at interest continue to bring their differences to the floor of the National Conference on Weights and Measures to permit full and open discussion in matters such as these that affect the entire body so that uniformity can be achieved and preserved.

(The foregoing item was adopted unanimously by voice vote.)

2. MODEL REGULATION FOR PEAT AND PEAT MOSS

In last year's Final Report of the Committee on Laws and Regulations, accompanying the Model State Regulation for Peat and Peat Moss, was the following statement:

> It has become obvious throughout this Conference, as discussion has occurred on this subject, that the views of the industry are so diverse that the Committee and the Conference must act only on information available to it and cannot act in response to a unified industry position. The recommendation made here with respect to mandatory quantities includes both the 5.5 and 6 cubic foot quantities—the principal point of controversy among industry spokesmen. The Committee desires to place the industry on notice that unless it can come to the Committee Secretary by January 15, 1969, with its recommendation between these two quantities. this Committee will be forced to make a selection without further counsel from representatives of producers.

Late last year, members of the peat moss industry were reminded of this Committee statement and their comments were solicited through a mass mailing that attempted to reach as many members of the peat moss industry as was possible. Comments received revealed virtually the same points of view that were in evidence at the last Conference, reflecting the continuing division on this matter within the peat moss industry. It has become evident to the Committee that, were the Committee to proceed to make an arbitrary choice between the 5.5- and 6-cubic foot quantities, it could result in a detrimental marketing and pricing imbalance.

It appears that, in the unique case of these two quantities, the 5.5- and 6-cubic feet, if the Committee were to recommend a regulation that excluded either, it might harmfully affect the competitive balance that presently exists at this quantity range. Accordingly, it is recommended that Section 4.2 *CUBIC-MEASURE UNITS* remain as adopted by the 53d National Conference.

The conflicts within the peat moss industry that finally resulted in the involvement of the NBS Office of Weights and Measures and the National Conference on Weights and Measures appear at this point to be irreconcilable. The Committee hopes that the peat moss industry will agree that, through this discussion process, the problem has been brought into the open, crystallized, and better identified. Using this as a foundation, the Committee urges the peat moss industry to proceed on their own to resolve this problem in consumer value comparisons. Problems remain irreconcilable, not because of the nature of things, but because of the nature of people. The Committee hopes that the people of the peat moss industry will continue to make some effort to resolve their differences.

The Committee would also like to emphasize that, now that a regulation is an accomplished fact ready for promulgation by the States,

the Office of Weights and Measures will proceed to work out an appropriate test method for checking the quantity of contents of packages of peat and peat moss. The Office of Weights and Measures has already begun to experiment with test methods and has assured the Committee that this recommended test method will be ready for distribution to the States before the end of this year. This means that, before next spring, many and possibly most of the State weights and measures officials will be actively engaged in checking the quantities of contents of packages of peat moss.

In addition, the Committee affirms its intent to continue studying the problems in the peat moss industry, as well as all other elements of the soil conditioner and mulch industries. It has been brought to the Committee's attention that soil conditioners and mulches are comparable products and proper packaging and labeling regulations for these products should be considered.

(The foregoing item was adopted unanimously by voice vote.)

3. METHOD OF SALE OF CALKING COMPOUND, GLAZING COMPOUND, AND PUTTY

Last year considerable discussion on the subject of calking compound evidenced no unanimity of thought among those who wished sale of the subject product by weight and those who preferred other methods, so the matter was referred back to the Committee. The Committee has discussed this matter further and feels that it must reiterate its recommendation of last year that calking compound, glazing compound, and putty be sold in terms of units of liquid measure and that packages of such commodities be labeled in terms of liquid measure.

(The foregoing item was adopted unanimously by voice vote.)

4. ASPHALT PAINTS, COATINGS, AND PLASTICS

The Committee is in receipt of correspondence from the Asphalt Roofing Manufacturers Association that reads in part as follows:

Naturally those who are using liquid measure would prefer to continue that way and those who are packaging by weight are also somewhat reluctant to change. However, all wish to have a uniform method which will allow interstate shipments of our product.

If a Model State Regulation requiring packaging of Asphalt Paints, Coatings and Plastics by liquid measure is adopted by the National Conference on Weights and Measures and we are given adequate time to work off present inventories of both finished goods and empty containers our industry is willing to convert over to the packaging of these items by liquid measure.

As is true in the case of calking compounds, the Committee can see many advantages to be gained by bringing about uniform methods of sale and labeling for this product and so recommends that asphalt paints, coatings, and plastics be sold in terms of units of liquid measure and that packages of such commodities be labeled in terms of liquid measure.

(The foregoing item was adopted unanimously by voice vote.)

5. MODEL STATE PACKAGING AND LABELING REGULATION

The Model State Packaging and Labeling Regulation has been the subject of extensive deliberations by the Committee over the past year. For the most part, the Committee has set as its goal the revamping of the Regulation to enhance its utility, to remove inconsistencies, and to make it as compatible as possible with Federal Regulations.

Significant editorial changes have been made in the Regulation through the rearranging, restructuring and renumbering of the several sections. In some instances, requirements have been relocated, or combined with other requirements, or split off into separate sections for ease in citation and use.

Some changes in substance have been made utilizing the *interim procedure* established at the 53d Conference. For the most part, this procedure allowed for rapid changes where necessary; however, there does not appear to be quite the same urgency as a year ago and utilization of the procedure will in all likelihood decrease substantially. Where its use is required, every effort will be made to consult and confer with appropriate industry representatives, and generally to permit industry participation in any necessary changes to the Model Law or Regulation.

The Committee recommends the adoption of the following Model State Packaging and Labeling Regulation of 1969:

MODEL STATE PACKAGING AND LABELING REGULATION OF 1969

1. *APPLICATION.*—This regulation shall apply to packages and to commodities in package form, but shall not apply to:

(a) inner wrappings not intended to be individually sold to the customer,

(b) auxiliary containers or outer wrappings used to deliver packages of such commodities to retail customers if such containers or wrappings bear no printed matter pertaining to any particular commodity,

(c) containers used for retail tray pack displays when the container itself is not intended to be sold (e.g., the tray that is used to display individual envelopes of seasonings, gravies, etc. and the tray itself is not intended to be sold),

(d) commodities put up in variable weights and sizes for sale intact and intended to be either weighed or measured at the time of sale, where no package quantities are represented, and where the method of sale is clearly indicated in close proximity to the quantity being sold, or

(e) open carriers and transparent wrappers or carriers for containers when the wrappers or carriers do not bear any written, printed, or graphic matter obscuring the label information required by this regulation.

DISCUSSION ON SECTION 1(e)

MR. C. O. COTTOM: Mr. Chairman, I would like to propose an amendment to section 1(e) by adding at the end of it the wording "obscuring the label information required by the regulation."

MR. LYLES: Mr. Cottom, the Committee expects to get some discussion on this item as it affects soft drinks. Would you care to make a motion that section 1(e) be tabled until after discussion of the exemption section for soft drinks?

(The motion to table consideration of section 1(e) was carried.)

2. *DEFINITIONS.*

2.1. *COMMODITY IN PACKAGE FORM.*—The term "commodity in package form" shall be construed to mean a commodity put up or packaged in any manner in advance of sale in units suitable for either wholesale or retail sale. An individual item or lot of any commodity not in package form as defined in this section, but on which there is marked a selling price based on an established price per unit of weight or of measure, shall be construed to be a commodity in package form. Where the term "package" is used in this regulation, it shall be construed to mean "commodity in package form" as here defined.

DISCUSSION ON SECTION 2.1

MR. COTTOM: Mr. Chairman, I move to amend section 2.1. by deleting the last sentence and by adding a new section 2.4. defining the term package as it was defined in the 1968 Model Packaging and Labeling Regulation, and renumbering sections 2.4. through 2.8.

(After lengthy discussion by weights and measures officials and industry representatives, the motion was carried. Further lengthy discussion ensued concerning the amended definition of the term "package" with particular emphasis on its application to open containers for soft drink bottles.)

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MR. LYLES: Is there anyone that voted for the amendment who would like to make a motion to reconsider?

MR. GREENSPAN: I move to reconsider the amendment.

(The motion carried.)

MR. LYLES: At this point we need a motion to table section 2.1. until this afternoon.

MR. GREENSPAN: I move that we table the action on section 2.1. until this afternoon just prior to the meeting of the S & T Committee.

(The motion carried.)

2.2. *CONSUMER PACKAGE: PACKAGE OF CONSUMER COMMODITY.*—A "consumer package" or "package of consumer commodity" shall be construed to mean a commodity in package form that is customarily produced or distributed for sale through retail sales agencies or instrumentalities for consumption by individuals, or use by individuals for the purposes of personal care or in the performance of services ordinarily rendered in or about the household or in connection with personal possessions.

2.3 *NONCONSUMER PACKAGE: PACKAGE OF NONCONSUMER COMMODITY.*—A "nonconsumer package" or "package of nonconsumer commodity" shall be construed to mean any commodity in package form other than a consumer package, and particularly a package intended solely for industrial or institutional use or for wholesale distribution.

2.4. *RANDOM PACKAGE.*—The term "random package" shall be construed to mean a package that is one of a lot, shipment, or delivery of packages of the same consumer commodity with varying weights; that is, packages of the same consumer commodity with no fixed pattern of weight.

2.5. *LABEL.*—The term "label" shall be construed to mean any written, printed, or graphic matter affixed to, applied to, attached to, blown into, formed, molded into, embossed on, or appearing upon or adjacent to a consumer commodity or a package containing any consumer commodity, for purposes of branding, identifying, or giving any information with respect to the commodity or to the contents of the package, except an inspector's tag or other nonpromotional matter affixed to or appearing upon a consumer commodity shall not be deemed to be a label requiring the repetition of label information required by this regulation.

2.6. *PERSON.*—The term "person" shall be construed to mean both singular and plural, and shall include any individual, partnership, company, corporation, association, and society.

2.7. *PRINCIPAL DISPLAY PANEL OR PANELS.*—The term "principal display panel or panels" shall be construed to mean that part, or those parts, of a label that is, or are, so designed as to most

likely be displayed, presented, shown, or examined under normal and customary conditions of display and purchase. Wherever a principal display panel appears more than once on a package, all requirements pertaining to the "principal display panel" shall pertain to all such "principal display panels."

2.8. *MULTI-UNIT PACKAGE.*—The term "multi-unit package" shall be construed to mean a package containing two or more individual packages of the same commodity, in the same quantity, with the individual packages intended to be sold as part of the multi-unit package but capable of being individually sold in full compliance with all requirements of this regulation.

3. *IDENTITY.*

3.1. *DECLARATION OF IDENTITY: CONSUMER PACKAGE.*—A declaration of identity on a consumer package shall appear on the principal display panel, and shall positively identify the commodity in the package by its common or usual name, description, generic term, or the like.

3.1.1. *PARALLEL IDENTITY DECLARATION : CONSUMER PACKAGE.*—A declaration of identity on a consumer package shall appear generally parallel to the base on which the package rests as it is designed to be displayed.

4. *DECLARATION OF IDENTITY: NONCONSUMER PACKAGE.*—A declaration of identity on a nonconsumer package shall appear on the outside of a package and shall positively identify the commodity in the package by its common or usual name, description, generic term, or the like.

5. *DECLARATION OF RESPONSIBILITY: CONSUMER AND NONCONSUMER PACKAGES.*—Any package kept, offered, or exposed for sale, or sold, at any place other than on the premises where packed shall specify conspicuously on the label of the package the name and address of the manufacturer, packer, or distributor. The name shall be the actual corporate name, or, when not incorporated, the name under which the business is conducted. The address shall include street address, city, State, and ZIP Code; however, the street address may be omitted if this is shown in a current city directory or telephone directory. The requirement for inclusion of the ZIP Code shall apply only to labels that have been developed or revised after July 1, 1968.

If a person manufactures, packs, or distributes a commodity at a place other than his principal place of business, the label may state the principal place of business in lieu of the actual place where the commodity was manufactured or packed or is to be distributed, unless such statement would be misleading. Where the commodity is not manufactured by the person whose name appears on the label, the name shall be qualified by a phrase that reveals the connection such

person has with such commodity, such as "manufactured for and packed by ————————," "Distributed by ———————— ————————," or any other wording of similar import that expresses the facts.

6. *DECLARATION OF QUANTITY: CONSUMER PACKAGES.*

6.1. *LARGEST WHOLE UNIT.*—Where this regulation requires that the quantity declaration be in terms of the largest whole unit, the declaration shall, with respect to a particular package, be in terms of the largest whole unit of weight or measure, with any remainder expressed in

(a) common or decimal fractions of such largest whole unit, or in
(b) the next smaller whole unit, or units, with any further remainder in terms of common or decimal fractions of the smallest unit present in the quantity declaration.

6.2. *NET QUANTITY.*—A declaration of net quantity of the commodity in the package, exclusive of wrappers and any other material packed with such commodity, shall appear on the principal display panel of a consumer package and, unless otherwise specified in this regulation (see Subsections 6.6. through 6.6.8.) shall be in terms of the largest whole unit.

6.2.1. *USE OF "NET WEIGHT."*—The term "net weight" shall be used in conjunction with the declaration of quantity in terms of weight; the term may either precede or follow the declaration of weight.

6.2.2. *LINES OF PRINT OR TYPE.*—A declaration of quantity may appear on one or more lines of print or type.

6.3. *TERMS: WEIGHT, LIQUID MEASURE, OR COUNT.*—The declaration of the quantity of a particular commodity shall be expressed in terms of liquid measure if the commodity is liquid, or in terms of weight if the commodity is solid, semisolid, viscous, or a mixture of solid and liquid, or in terms of numerical count. However, if there exists a firmly established general consumer usage and trade custom with respect to the terms used in expressing a declaration of quantity of a particular commodity, such declaration of quantity may be expressed in its traditional terms, if such traditional declaration gives accurate and adequate information as to the quantity of the commodity.

6.3.1. *COMBINATION DECLARATION: WEIGHT OR MEASURE.*—A declaration of quantity in terms of weight or measure shall be accompanied by a declaration of the count or size of the individual units of the commodity, unless a declaration of weight or measure alone is fully informative to the consumer. Such declaration shall appear on the principal display panel.

6.3.2. *COMBINATION DECLARATION: COUNT.*—A declara-

tion of quantity in terms of count shall be accompanied by a declaration of the weight, measure, or size of the individual units of the commodity, or of the total weight or measure of the commodity, unless a declaration of count alone is fully informative to the consumer. Such declaration shall appear on the principal display panel.

6.4. *UNITS: WEIGHT, MEASURE.*—A declaration of quantity

(a) in units of weight shall be in terms of the avoirdupois pound or ounce;

(b) in units of liquid measure shall be in terms of the United States gallon of 231 cubic inches or liquid-quart, liquid-pint, or fluid-ounce subdivisions of the gallon, and shall express the volume at 68 °F (20 °C), except in the case of petroleum products, for which the declaration shall express the volume at 60 °F (15.6 °C), and except also in the case of a commodity that is normally sold and consumed while frozen, for which the declaration shall express the volume at the frozen temperature, and except also in the case of a commodity that is normally sold in the refrigerated state, for which the declaration shall express the volume at 40 °F (4 °C);

(c) in units of linear measure shall be in terms of the yard, foot, or inch;

(d) in units of area measure, shall be in terms of the square yard, square foot, or square inch;

(e) in units of dry measure shall be in terms of the United States bushel of 2,150.42 cubic inches, or peck, dry-quart, and dry-pint subdivisions of the bushel;

(f) in units of cubic measure shall be in terms of the cubic yard, cubic foot, or cubic inch:

Provided, That in the case of prescription or insulin containing drugs, or in the case of a commodity packed for export shipment, the declaration of quantity may be in terms of the Metric System of weight or measure.

6.4.1. *ABBREVIATIONS.*—Any of the following abbreviations, and none other, may be employed in the quantity statement on a package of commodity:

avoirdupois	avdp	quart	qt
cubic	cu	square	sq
feet or foot	ft	weight	wt
fluid	fl	yard	yd
gallon	gal	cubic centimeter	cc
inch	in	gram	g
liquid	liq	kilogram	kg
ounce	oz	microgram	mcg
pint	pt	milligram	mg
pound	lb	milliliter	ml

(There normally are no periods following, nor plural forms of, these abbreviations. For example, "oz" is the abbreviation for both "ounce" and "ounces.")

6.5. *UNITS WITH TWO OR MORE MEANINGS.*—When the term "ounce" is employed in a declaration of liquid quantity, the declaration shall identify the particular meaning of the term by the use of the term "fluid;" however, such distinction may be omitted when, by association of terms (for example, as in "1 pint 4 ounces"), the proper meaning is obvious. Whenever the declaration of quantity is in terms of the dry pint or dry quart, the declaration shall include the word "dry."

6.6 *PRESCRIBED UNITS.*

6.6.1. *LESS THAN ONE FOOT, ONE SQUARE FOOT, ONE POUND, OR ONE PINT.*—The declaration of quantity shall be expressed in terms of

(a) in the case of length measure of less than one foot, inches and fractions of inches;

(b) in the case of area measure of less than one square foot, square inches and fractions of square inches;

(c) in the case of weight of less than one pound, ounces and fractions of ounces;

(d) in the case of fluid measure of less than one pint, ounces and fractions of ounces;

Provided, That the quantity declaration appearing on a random package may be expressed in terms of decimal fractions of the largest appropriate unit, the fraction being carried out to not more than two decimal places.

6.6.2. *FOUR FEET, FOUR SQUARE FEET, FOUR POUNDS, ONE GALLON, OR MORE.*—In the case of

(a) length measure of four feet or more

the declaration of quantity shall be expressed in terms of feet, followed in parentheses by a declaration of yards and common or decimal fractions of the yard, or in terms of feet followed in parentheses by a declaration of yards with any remainder in terms of feet and inches. In the case of

(a) area measure of four square feet or more;

(b) weight of four pounds or more;

(c) fluid measure of one gallon or more

the declaration of quantity shall be expressed in terms of the largest whole unit.

6.6.3. *WEIGHT: DUAL QUANTITY DECLARATION.*—On packages containing one pound or more but less than four pounds, the declaration shall be expressed in ounces and, in addition, shall be followed by declaration in parentheses, expressed in terms of the largest whole unit: Provided, That the quantity declaration appear-

ing on a random package may be expressed in terms of pounds and decimal fractions of the pound carried out to not more than two decimal places.

6.6.4. *FLUID MEASURE: DUAL QUANTITY DECLARATION.*—On packages containing one pint or more but less than one gallon, the declaration shall be expressed in ounces and, in addition, shall be followed by a declaration in parentheses, expressed in terms of the largest whole unit.

6.6.5. *LENGTH MEASURE: DUAL QUANTITY DECLARATION.*—On packages containing one foot but less than four feet, the declaration shall be expressed in inches and, in addition, shall be followed by a declaration in parentheses, expressed in terms of the largest whole unit.

6.6.6. *AREA MEASURE: DUAL QUANTITY DECLARATION.*—On packages containing one square foot but less than four square feet, the declaration shall be expressed in square inches and, in addition, shall be followed by a declaration in parentheses, expressed in terms of the largest whole unit.

6.6.7. *BIDIMENSIONAL COMMODITIES.*—For bidimensional commodities (including roll-type commodities) the quantity declaration shall be expressed,

(a) if less than one square foot, in terms of linear inches and fractions of linear inches;

(b) if at least one square foot but less than four square feet, in terms of square inches followed in parentheses by a declaration of both the length and width, each being in terms of the largest whole unit: Provided, That

(1) no square inch declaration is required for a bidimensional commodity of four inches width or less, and

(2) a dimension of less than two feet may be stated in inches within the parenthetical, and

(3) commodities consisting of usable individual units (except roll-type commodities with individual usable units created by perforations, for which see Subsection 6.6.8. COUNT: PLY) require a declaration of unit area but not a declaration of total area of all such units;

(c) if four square feet or more, in terms of square feet followed in parentheses by a declaration of the length and width in terms of the largest whole unit: Provided, That

(1) no declaration in square feet is required for a bidimensional commodity with a width of four inches or less,

(2) a dimension of less than two feet may be stated in inches within the parenthetical, and

(3) no declaration in square feet is required for commodities for which the length and width measurements are critical

in terms of end use (such as tablecloths or bedsheets) if such commodities clearly present the length and width measurements on the label.

6.6.8. *COUNT: PLY.*—If the commodity is in individually usable units of one or more components or ply, the quantity declaration shall, in addition to complying with other applicable quantity declaration requirements of this regulation, include the number of ply and the total number of usable units.

Roll-type commodities, when perforated so as to identify individual usable units, shall not be deemed to be made up of usable units; however, such roll-type commodities shall be labeled in terms of

(a) total area measurement and
(b) number of ply,
(c) count of usable units, and
(d) dimensions of a single usable unit.

6.7. *REDUCTION OF FRACTIONS.*—Fractions employed in declarations of quantity may be either common fractions or decimal fractions. A common fraction shall be in terms of halves, quarters, eighths, sixteenths, or thirty-seconds, and shall be reduced to its lowest terms. A decimal fraction shall not be carried out to more than two places: Provided, That if there exists, with respect to a particular commodity, a firmly established general consumer usage and trade custom contrary to the requirement pertaining to common fractions, as set forth above, the declaration may be made in accordance with such usage and custom; And provided further, That in the case of prescription or insulin containing drugs, a decimal fraction may be carried out to three places.

6.8. *SUPPLEMENTARY DECLARATIONS.*

6.8.1. *SUPPLEMENTARY QUANTITY DECLARATIONS.*—The required quantity declaration may be supplemented by one or more declarations of weight, measure, or count, such declaration appearing other than on a principal display panel. Such supplemental statement of quantity of contents shall not include any terms qualifying a unit of weight, measure, or count that tends to exaggerate the amount of commodity contained in the package (e.g., "giant" quart, "full" gallon, "when packed," "minimum," or words of similar import).

6.8.2. *METRIC SYSTEM DECLARATIONS.*—A separate statement of the net quantity of contents in terms of the metric system is not regarded as a supplemental statement, and a statement of quantity in terms of the metric system of weight or measure may also appear on the principal display panel or on other panels.

6.9. *QUALIFICATION OF DECLARATION PROHIBITED.*—In no case shall any declaration of quantity be qualified by the

addition of the words "when packed," "minimum," or "not less than," or any words of similar import, nor shall any unit of weight, measure, or count be qualified by any term (such as "jumbo," "giant," "full," or the like) that tends to exaggerate the amount of commodity.

7. *DECLARATION OF QUANTITY: NONCONSUMER PACKAGES.*

7.1. *LOCATION.*—A nonconsumer package shall bear on the outside a declaration of the net quantity of contents. Such declaration shall be in terms of the largest whole unit (see Subsection 6.1. LARGEST WHOLE UNIT).

7.2. *TERMS: WEIGHT, LIQUID MEASURE, OR COUNT.*—The declaration of the quantity of a particular commodity shall be expressed in terms of liquid measure if the commodity is liquid, or in terms of weight if the commodity is solid, semisolid, viscous, or a mixture of solid and liquid, or in terms of numerical count. However, if there exists a firmly established general consumer usage and trade custom with respect to the terms used in expressing a declaration of quantity of a particular commodity, such declaration of quantity may be expressed in its traditional terms, if such traditional declaration gives accurate and adequate information as to the quantity of the commodity.

7.3. *UNITS: WEIGHT, MEASURE.*—A declaration of quantity

(a) in units of weight shall be in terms of the avoirdupois pound or ounce;

(b) in units of liquid measure shall be in terms of the United States gallon of 231 cubic inches or liquid-quart, liquid-pint, or fluid-ounce subdivisions of the gallon, and shall express the volume at 68 °F (20 °C), except in the case of petroleum products, for which the declaration shall express the volume at 60 °F (15.6 °C), and except also in the case of a commodity that is normally sold and consumed while frozen, for which the declaration shall express the volume at the frozen temperature, and except also in the case of a commodity that is normally sold in the refrigerated state, for which the declaration shall express the volume at 40 °F (4° C);

(c) in units of linear measure shall be in terms of the yard, foot, or inch;

(d) in units of area measure, shall be in terms of the square yard, square foot, or square inch;

(e) in units of dry measure shall be in terms of the United States bushel of 2,150.42 cubic inches, or peck, dry-quart and dry-pint subdivisions of the bushel;

(f) in units of cubic measure shall be in terms of the cubic yard, cubic foot, or cubic inch:

Provided, That nothing in this subsection shall prohibit the labeling of nonconsumer packages in terms of units of the Metric System.

7.3.1. *ABBREVIATIONS.*—Any generally accepted abbreviation of a unit name may be employed in the quantity statement on a package of commodity. (For commonly accepted abbreviations, see subsection 6.4.1. ABBREVIATIONS.)

7.4. *CHARACTER OF DECLARATION: AVERAGE.*—The average quantity of contents in the packages of a particular lot, shipment, or delivery shall at least equal the declared quantity, and no unreasonable shortage in any package shall be permitted, even though overages in other packages in the same shipment, delivery, or lot compensate for such shortage.

8. *PROMINENCE AND PLACEMENT: CONSUMER PACKAGES.*

8.1. *GENERAL.*—All information required to appear on a consumer package shall appear thereon in the English language and shall be prominent, definite, and plain, and shall be conspicuous as to size and style of letters and numbers and as to color of letters and numbers in contrast to color of background. Any required information that is either in hand lettering or hand script shall be entirely clear and equal to printing in legibility.

8.1.1. *LOCATION.*—The declaration or declarations of quantity of the contents of a package shall appear in the bottom 30 percent of the principal display panel or panels, except as otherwise provided in section 10.7. CYLINDRICAL CONTAINERS.

8.1.2. *STYLE OF TYPE OR LETTERING.*—The declaration or declarations of quantity shall be in such a style of type or lettering as to be boldly, clearly, and conspicuously presented with respect to other type, lettering, or graphic material on the package, except that a declaration of net quantity blown, formed, or molded on a glass or plastic surface is permissible when all label information is blown, formed, or molded on the surface.

8.1.3. *COLOR CONTRAST.*—The declaration or declarations of quantity shall be in a color that contrasts conspicuously with its background, except that a declaration of net quantity blown, formed, or molded on a glass or plastic surface shall not be required to be presented in a contrasting color if no required label information is on the surface in a contrasting color.

8.1.4 *FREE AREA.*—The area surrounding the quantity declaration shall be free of printed information.

(a) above and below, by a space equal to at least the height of the lettering in the declaration, and

(b) to the left and right, by a space equal to twice the width of the letter "N" of the style and size of type used in the declaration.

8.1.5. *PARALLEL QUANTITY DECLARATION.*—The quantity declaration shall be presented in such a maner as to be generally

parallel to the declaration of identity and to the base on which the package rests as it is designed to be displayed.

8.2. *CALCULATION OF AREA OF PRINCIPAL DISPLAY PANEL FOR PURPOSES OF TYPE SIZE.*—The square-inch area of the principal display panel shall be

(a) in the case of a rectangular container, one entire side which properly can be considered to be the principal display panel, the product of the height times the width of that side;

(b) in the case of a cylindrical or nearly cylindrical container, 40 percent of the product of the height of the container times the circumference; or

(c) in the case of any other shaped container, 40 percent of the total surface of the container, unless such container presents an obvious principal display panel (e.g., the top of a triangular or circular package of cheese, or the top of a can of shoe polish), the area shall consist of the entire such surface.

Determination of the principal display panel shall exclude tops, bottoms, flanges at tops and bottoms of cans, and shoulders and necks of bottles or jars.

8.2.1. *MINIMUM HEIGHT OF NUMBERS AND LETTERS.*—The height of any letter or number in the required quantity declaration shall be not less than that shown in Table 1 with respect to the square-inch area of the panel, and the height of each number of a common fraction shall meet one-half the minimum height standards.

8.2.2 *NUMBERS AND LETTERS: PROPORTION.*—No number or letter shall be more than three times as high as it is wide.

TABLE 1.—*Minimum Height of Numbers and Letters*

Square-inch area of principal display panel	Minimum height of numbers and letters	Minimum height: label information blown, formed, or molded on surface of container
	Inch	*Inch*
5 square inches and less	1/16	1/8
Greater than 5 square inches and not greater than 25 square inches	1/8	3/16
Greater than 25 square inches and not greater than 100 square inches	3/16	1/4
Greater than 100 square inches and not greater than 400 square inches	1/4	5/16
Greater than 400 square inches	1/2	9/16

9. *PROMINENCE AND PLACEMENT: NONCONSUMER PACKAGE.*

9.1. *GENERAL.*—All information required to appear on a nonconsumer package shall be definitely and clearly stated thereon in the English language. Any required information that is either in hand lettering or hand script shall be entirely clear and equal to printing in legibility.

10. *REQUIREMENTS: SPECIFIC CONSUMER COMMODITIES, PACKAGES, CONTAINERS.*

10.1. *DISPLAY CARD PACKAGE.*—For an individual package affixed to a display card, or for a commodity and display card together comprising a package, the type size of the quantity declaration is governed by the dimensions of the display card.

10.2. *EGGS.*—When cartons containing 12 eggs have been designed so as to permit division in half by the retail purchaser, the required quantity declaration shall be so positioned as to have its context destroyed when the carton is divided.

10.3. *AEROSOLS AND SIMILAR PRESSURIZED CONTAINERS.*—The declaration of quantity on an aerosol package, and on a similar pressurized package, shall disclose the net quantity of the commodity (including propellant), in terms of weight, that will be expelled when the instructions for use as shown on the container are followed.

10.4. *MULTI-UNIT PACKAGES.*—Any package containing more than one individual "commodity in package form" (see subsection 2.1.) of the same commodity shall bear on the outside of the package a declaration of

(a) the number of individual units,

(b) the quantity of each individual unit, and

(c) the total quantity of the contents of the multi-unit package: Provided, That the requirement for a declaration of the total quantity of contents of a multi-unit package shall be effective (1) with respect to those labels revised after the effective date of this regulation, or (2) as of January 1, 1970, whichever occurs first. Any such declaration of total quantity shall not be required to include the parenthetical quantity statement of a dual quantity representation.

Whenever the quantity declaration appearing on individual units of a multi-unit package is located other than in the lower 30 percent of the principal display panel, the individual units of that multi-unit package may not be separately sold.

(Comments have been received from various industry members requesting deletion of the additional requirements for multi-unit packages. The Committee reaffirms its position that the additional re-

quirements for multi-unit packages are necessary to enable consumers to make value comparisons and to bring uniformity to the present confusing manner in which such packages are currently labeled.)

DISCUSSION ON SECTION 10.4

MR. COTTOM: Mr. Chairman, I would like information at this point. Is this section (Multi-Unit Packages) in direct conflict with the FDA regulations under FPLA?

MR. LYLES: It is not in direct conflict. It requires, I think, additional information.

MR. COTTOM: Would this be information different from that required by the FDA regulation?

MR. LYLES: If the packages are labeled in this manner, it will meet the requirements of the FDA.

MR. P. M. PHILLIPES: Mr. Chairman, the Industry Committee appreciates the fact that the Committee has reconsidered our comments in regard to this multi-unit package requirement. Although we do not necessarily agree with your legal or your substantive conclusion on the regulation, we will take it as a fact that regulation has been adopted. However, we would like to bring to the Committee's attention the fact that, as presently written, the regulation will take effect as of January 1, 1970, which is about six months from now.

Now, the people who use this type packages have just gone through a labeling revision to comply with the Fair Packaging and Labeling Act and, as yet, none of the Federal agencies has adopted a total quantity requirement. Therefore, the new packages which were printed up to comply with the Fair Packaging and Labeling Act requirements do not have this triple declaration that you people are now requiring. Consequently, it would be almost physically impossible for industry to print up new packages by January 1, 1970, and get them into use.

Many firms have large stocks of new labels which were printed up at substantial cost following the adoption of the Food and Drug Administration and Federal Trade Commission Regulations. Therefore, we would propose that the Committee consider delaying the effect of this regulation until January 1, 1972, which will give industry a chance to use up noncomplying labels. Since these labels do comply with the Fair Packaging and Labeling Act requirements, consumers will be protected in the interim.

MR. LYLES: The Committee would like to remind the industry representative that this requirement was adopted last year, so they have had time from last year to bring the labels into compliance by January 1, 1970.

10.5. *COMBINATION PACKAGES.*—Any package containing individual units of dissimilar commodities (such as an antiquing kit,

for example) shall bear on the label of the package a quantity declaration for each unit.

10.6. *VARIETY PACKAGES.*—Any package containing individual units of reasonably similar commodities (such as, for example, seasonal gift packages, variety packages of cereal) shall bear on the label of the package a declaration of the total quantity of commodity in the package.

10.7. *CYLINDRICAL CONTAINERS.*—In the case of cylindrical or nearly cylindrical containers, information required to appear on the principal display panel shall appear within that 40 percent of the circumference which is most likely to be displayed, presented, shown, or examined under customary conditions of display for retail sale.

11. *EXEMPTIONS.*

11.1. *GENERAL.*—Whenever any consumer commodity or package of consumer commodity is exempted from the requirements for dual quantity declaration, the net quantity declaration required to appear on the package shall be in terms of the largest whole unit (except see subsection 10.4. (c)).

11.2. *RANDOM PACKAGES.*—A random package bearing a label conspicuously declaring

(a) the net weight,
(b) the price per pound, and
(c) the total price

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

11.3. *PENNY CANDY.*—When individually wrapped pieces of "penny candy" are shipped in a container that conforms to the labeling requirements of this regulation, the individually wrapped pieces shall be exempt from the labeling requirements of this regulation. When individually wrapped pieces of candy of less than ½ ounce net weight are sold in bags or boxes that conform to the labeling requirements of this regulation, the individual pieces shall be exempt from the requirement for declaration of net quantity.

11.4. *INDIVIDUAL SERVINGS.*—Individual-serving-size packages of foods containing less than ½ ounce or less than ½ fluid ounce for use in restaurants, institutions, and passenger carriers, and not intended for sale at retail, shall be exempt from the required declaration of net quantity of contents specified in this regulation.

11.5. *CUTS, PLUGS, AND TWISTS OF TOBACCO AND CIGARS.*—When individual cuts, plugs, and twists of tobacco and individual cigars are shipped or delivered in containers that conform to the labeling requirements of this regulation, such individual cuts,

plugs, and twists of tobacco and cigars shall be exempt from such labeling requirements.

11.6. *REUSABLE (RETURNABLE) GLASS CONTAINERS.* Nothing in this regulation shall be deemed to preclude the continued use of reusable (returnable) glass containers: Provided, That such glass containers ordered after the effective date of this regulation shall conform to all requirements of this regulation.

11.7. *CIGARETTES AND SMALL CIGARS.*—Cartons of cigarettes and small cigars, containing ten individual packages of twenty, labeled in accordance with the requirements of this regulation, shall be exempt from the requirements set forth in subsection 8.1.1. LOCATION, subsection 8.2.1. MINIMUM HEIGHT OF NUMBERS AND LETTERS, and section 10.4. MULTI-UNIT PACKAGES: Provided, That such cartons bear a declaration of the net quantity of commodity in the package.

11.8. *PACKAGED COMMODITIES WITH LABELING REQUIREMENTS SPECIFIED IN FEDERAL LAW.*—Packages of meat and meat products, poultry and poultry products, tobacco and tobacco products, insecticides, fungicides, rodenticides, prescription and insulin-containing drugs, alcoholic beverages, and seeds shall be exempt from the requirements set forth in subsection 6.6.3. WEIGHT: DUAL QUANTITY DECLARATION, 6.6.4. FLUID MEASURE: DUAL QUANTITY DECLARATION, 6.6.5. LENGTH MEASURE: DUAL QUANTITY DECLARATION. 6.6.6. AREA MEASURE: DUAL QUANTITY DECLARATION, 8.1.1. LOCATION, and subsection 8.2.1. MINIMUM HEIGHT OF NUMBERS AND LETTERS: Provided, That quantity labeling requirements for such products are specified in Federal Law, so as to follow reasonably sound principles of providing consumer information.

11.9. *FLUID DAIRY PRODUCTS, ICE CREAM, AND SIMILAR FROZEN DESSERTS.*—

(a) When measured by and packaged in ½-liquid pint and ½-gallon measure containers, as defined in the "Measure Container Code of National Bureau of Standards Handbook 44," are exempt from the requirements for stating net contents of 8 fluid ounces and 64 fluid ounces, which may be expressed as ½-pint and ½-gallon respectively.

(b) When measured by and packaged in 1-liquid pint, 1-liquid quart, and ½ gallon measure containers, as defined in the "Measure Container Code of National Bureau of Standards Handbook 44," are exempt from the dual net contents declaration requirements of subsection 6.6.4.

(c) When measured by and packaged in ½ liquid pint, 1-liquid pint, 1-liquid quart, ½-gallon, and 1 gallon measure containers as defined in "Measure Container Code of National Bureau of Standards Handbook 44," are exempt from the requirement of subsection 8.1.1. that

the declaration of net contents be located within the bottom 30 percent of the principal display panel.

(d) Milk and milk products when measured by and packaged in glass or plastic containers of ½-liquid pint, 1-liquid pint, 1-liquid quart, ½ gallon, and 1 gallon capacities are exempt from the placement requirement of Subsection 8.1.1. that the declaration of net contents be located within the bottom 30 percent of the principal display panel, provided that other required label information is conspicuously displayed on the cap or outside closure, and the required net quantity of contents declaration is conspicuously blown, formed, or molded on, or permanently applied to that part of the glass or plastic container that is at or above the shoulder of the container.

(e) Molded, frozen confections (made up of ice cream or related frozen desserts) shall be exempt from the requirement for a declaration of TOTAL QUANTITY OF CONTENTS on a multi-unit package (see subsection 10.4.).

11.10. *SOFT-DRINK BOTTLES.*—Bottles of soft drinks shall be exempt from the placement requirements for the declaration of

(a) identity, when such declaration appears on the bottle closure, and

(b) quantity, when such declaration is blown, formed, or molded on or above the shoulder of the container and when all other information required by this regulation appears only on the bottle closure.

11.11. *MULTI-UNIT SOFT-DRINK PACKAGES.*—Multi-unit packages of soft drinks are exempt from the requirement for a declaration of

(a) responsibility, when such declaration appears on the individual units and is not obscured by the multi-unit packaging, or when the outside container bears a statement to the effect that such declaration will be found on the individual units inside, and

(b) identity, when such declaration appears on the individual units and is not obscured by the multi-unit packaging.

DISCUSSION ON SECTION 11.11

Lengthy discussion concerning the application of labeling requirements to open, basket-type, soft-drink carriers was engaged in by industry representatives and weights and measures officials. Particular emphasis was placed on the question of whether such carriers were within the scope of Food and Drug Administration regulations covering packaged foods and within the scope of the labeling requirements of the 1968 Model State Packaging and Labeling Regulation.

Industry representatives contended that the FDA did not consider

open carriers to be packages under the FPLA. It was also noted that such carriers are not limited to soft drinks, but are used for other food items.

Soft-drink industry representatives noted that open carriers are reusable and interchangeable, and that large numbers of such cartons were in use or in inventory. It was contended that the interchangeability factor was critical because the carriers were being used for one size or flavor at one time, and another size or flavor the next time. It was stated that, for these reasons, large numbers of such cartons were with the trade and were unlabeled, and economic hardship would result from a requirement that they be labeled. A committee offer to extend the time period for labeling of open carriers was rejected.

At the conclusion of the discussion, the chairman called for a motion.

MR. LYLES: Do I hear a motion to table section 11.11. until this afternoon to allow the Committee to work out appropriate language?

MR. D. I. OFFNER: Mr. Chairman, I make such a motion.

(The motion carried.)

11.12. *BUTTER.*—When packaged in 4-ounce, 8-ounce, and 1-pound units with continuous label copy wrapping, butter is exempt from the requirements that the statement of identity (subsection 3.1.) and the net quantity declaration (subsection 8.1.5.) be generally parallel to the base of the package. When packaged in 8-ounce and 1-pound units, butter is exempt from the requirement for LOCATION (subsection 8.1.1.) of net quantity declaration and, when packaged in 1-pound units, is exempt from the requirement for DUAL QUANTITY DECLARATION (subsection 6.6.3.).

11.13. *EGGS.*—Cartons containing 12 eggs shall be exempt from the requirement for LOCATION (subsection 8.1.1.) of net quantity declaration. When such cartons are designed to permit division in half, each half shall be exempt from the labeling requirements of this regulation if the undivided carton conforms to all such requirements.

11.14. *FLOUR.*—Packages of wheat flour packaged in units of 2, 5, 10, 25, 50, and 100 pounds shall be exempt from the requirement in this regulation for LOCATION (subsection 8.1.1.) of the net quantity declaration and, when packaged in units of 2 pounds, shall be exempt also from the requirement for a DUAL QUANTITY DECLARATION (subsection 6.6.3.).

11.15. *EXEMPTION: LOCATION: SMALL PACKAGE.*—On a principal display panel of five square inches or less, the declaration of quantity need not appear in the bottom 30 percent of the principal display panel if that declaration satisfies the other requirements of this regulation.

11.16. *EXEMPTION: MULTI-UNIT PACKAGE: LOCATION.*—On individual units of a multi-unit retail package, the dec-

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laration of quantity need not appear in the bottom 30 percent of the principal display panel if that declaration satisfies the other requirements of this regulation.

11.17. *EXEMPTION: DECORATIVE CONTAINER.*—The principal display panel of a cosmetic marketed in a "boudoir-type" container including decorative cosmetic containers of the "cartridge," "pill box," "compact," or "pencil" variety, and those with a capacity of one-fourth ounce or less, may be a tear-away tag or tape affixed to the decorative container and bearing the mandatory label information as required by this regulation.

11.18. *EXEMPTION: COMBINATION PACKAGES.*—Combination packages are exempt from the requirements in this regulation for

(a) LOCATION (see subsection 8.1.1.),

(b) FREE AREA (see subsection 8.1.4.), and

(c) MINIMUM HEIGHT OF NUMBERS AND LETTERS (see subsection 8.2.1.).

11.19. *MARGARINE.*—Margarine in 1-pound rectangular packages, except for packages containing whipped or soft margarine or packages containing more than four sticks, shall be exempt from the requirement in this regulation for LOCATION (see subsection 8.1.1.) of the net quantity declaration, and shall be exempt from the requirement for a DUAL QUANTITY DECLARATION (see subsection 6.6.3.).

11.20. *CORN FLOUR.*—Corn flour packaged in conventional 5, 10, 25, 50, and 100-pound bags shall be exempt from the requirement in this regulation for LOCATION (see subsection 8.1.1.) of the net quantity declaration.

11.21. *PRESCRIPTION AND INSULIN CONTAINING DRUGS.*—Packages of prescription and insulin containing drugs shall be exempt from the requirements set forth in section 10.4 MULTI-UNIT PACKAGES.

12. *VARIATIONS TO BE ALLOWED.*

12.1. *PACKAGING VARIATIONS.*

12.1.1 *VARIATIONS FROM DECLARED NET QUANTITY.*—Variations from the declared net weight, measure, or count shall be permitted when caused by unavoidable deviations in weighing, measuring, or counting the contents of individual packages that occur in good packaging practice, but such variations shall not be permitted to such extent that the average of the quantities in the packages of a particular commodity, or a lot of the commodity that is kept, offered, or exposed for sale, or sold, is below the quantity stated, and no unreasonable shortage in any package shall be permitted, even though overages in other packages in the same shipment, delivery, or lot compensate for such shortage. Variations above the declared quantity shall not be unreasonably large.

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

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

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

12.2. *MAGNITUDE OF PERMITTED VARIATIONS.*—The magnitude of variations permitted under paragraphs 12, 12.1., 12.1.1., and 12.1.2. of this regulation shall, in the case of any shipment, delivery, or lot, be determined by the facts in the individual case.

13. *REVOCATION OF CONFLICTING REGULATIONS.*—All provisions of all orders and regulations heretofore issued on this same subject that are contrary to or inconsistent with the provisions of this regulation, and specifically _____

_____

are hereby revoked.

EFFECTIVE DATE

This regulation shall become effective on _____

Given under my hand and the seal of my office in the City of _____ _____, on this _____ day of _____, A.D. 19____.

Signed _____

J. F. LYLES, *Acting Chairman*
G. L. DELANO
R. W. RICHARDS
J. H. WILSON
H. F. WOLLIN, *Secretary*
E. A. VADELUND, *Staff Assistant*
Committee on Laws and Regulations

(After having considered and adopted, by voice vote, all sections of the Model State Packaging and Labeling Regulation of 1969, with the exception of sections 1(e), 2.1., and 11.11., the committee session was adjourned for several hours to permit the Committee to work out suitable language for the three sections on which action was tabled. The session was resumed and the three sections were adopted individually as they appear in this report. The committee chairman then moved for adoption of the entire report. The move was seconded, and the entire report was adopted unanimously by voice vote.)

(On motion of the committee chairman, seconded from the floor, the Conference by voice vote authorized the National Bureau of Standards to make any appropriate editorial changes in the language adopted by the Conference, so long as the principles thus adopted are strictly adhered to.)

REPORT OF THE CONFERENCE COMMITTEE ON NOMINATIONS

Presented by J. F. True, *Chairman, State Sealer, Division of Weights and Measures, State of Kansas*

(Thursday, June 12, 1969)

In line with the requirements of the Organization and Procedure of the Conference, Dr. A. V. Astin, the Director of the National Bureau of Standards, is the President of the Conference and is authorized to designate the Executive Secretary. All other officers are to be elected by the vote of the Conference.

We are indebted to the Executive Secretary for furnishing a list of those who have attended past Conferences and the number of years each has served on various committees.

Due consideration was given by this Committee to attendance records, geographical distribution, the Conference participation and interest shown in promoting weights and measures administration of the various officials.

Your Committee nominates for office for the 55th National Conference on Weights and Measures, the following:

Chairman: R. W. Searles, Medina County, Ohio.

Vice Chairmen: C. Wooten, Florida; M. H. Becker, Los Angeles County, California; L. A. Gredy, Indiana; J. R. Bird, New Jersey.

Treasurer: C. C. Morgan, Gary, Indiana.

Chaplain: J. I. Moore, North Carolina.

Executive Committee: R. T. Williams, Texas; F. J. Fallon, New York; F. D. Morgan, Utah; R. J. Cord, Prince George's County, Maryland; E. W. Ballentine, South Carolina; J. T. Bennett, Connecticut; B. R. Haught, West Virginia; R. C. Baumgartner, Livonia, Michigan; L. W. Vezina, Alexandria, Virginia; L. A. Rick, St. Louis County, Missouri.

J. F. True, *Chairman*
M. Jennings
F. J. Fallon
E. H. Black
H. E. Crawford
C. C. Morgan
R. E. Meek

Committee on Nominations

(There being no further nominations from the floor, nominations were declared closed and the officers nominated by the Committee were elected unanimously by voice vote.)

REPORT OF THE COMMITTEE ON RESOLUTIONS

(Thursday, June 12, 1969)

Presented by M. R. Dettler, *Chairman, Assistant Director, Division of Licenses and Standards, Seattle, Washington*

The Committee on Resolutions, having met and considered resolutions submitted to it by members of this 54th National Conference on Weights and Measures and other resolutions that originated with members of the Committee, now submits to this Conference for its consideration and action the following resolutions that have received the unanimous endorsement of the Committee.

There are included a number of individual resolutions which express appreciation for the arrangements for, conduct of, and participation in the National Conference. In order to expedite the handling of this phase of the Conference program, I request permission of the Chair simply to indicate those to whom appreciation is to be officially expressed:

1. To the Honorable Maurice H. Stans, Secretary of Commerce, for his constructive contribution to the 54th National Conference on Weights and Measures.

2. To the Director and staff of the National Bureau of Standards for their tireless efforts to insure a successful Conference in planning and administering the program and other details so essential to an interesting educational meeting.

3. To Mrs. Virginia H. Knauer for her excellent and enlightening address to the 54th National Conference Luncheon.

4. To all program speakers and standing committees for their excellent presentations and contributions to the success of the Conference.

5. To all State and local governing agencies that have arranged for or made possible the attendance at this meeting of one or more representatives of their organizations to participate in the deliberations directed toward the betterment of weights and measures controls throughout the Nation.

6. To business and industry for cooperating with the Conference, for attending and participating in the Conference, and for contributing to the success of the Conference through their participation and their gracious hospitality.

7. To the management of the Sheraton-Park Hotel, who, through the facilities and courtesies of its staff, has materially assisted in the conduct of the Conference.

The following resolutions were read in their entirety :

NATIONAL SCALE MEN'S ASSOCIATION

Whereas, the interests, goals, and objectives of the National Conference on Weights and Measures and the National Scale Men's Association are frequently identical ; and

Whereas, the National Scale Men's Association has announced its intention to develop a broad nationally-based program of weights and measures education within NSMA : Therefore, be it

Resolved that the National Conference on Weights and Measures does affirm its support and encouragement for such a program as being another important step toward progress in the weights and measures field.

RESOLUTION ON THE RETIREMENT OF DR. ASTIN

Whereas, Dr. Allen V. Astin has served the National Conference on Weights and Measures as its President since 1952, and

Whereas, Dr. Astin is retiring after having provided the National Conference on Weights and Measures with consistent support and encouragement : Therefore, be it

Resolved that the National Conference on Weights and Measures wishes Dr. Astin a well and happy retirement.

RESOLUTION ON METRIC STUDY

Whereas, the Congress of the United States has enacted Public Law 90–472 authorizing the Secretary of Commerce to make a study to determine the advantages and disadvantages of increased use of the Metric System in the United States ; and

Whereas, changes in the measurement system at home and abroad would no doubt have substantial impact on the weighing and measuring field ; and

Whereas, the National Bureau of Standards, which has been assigned the responsibility for conducting this study, has requested that the National Conference on Weights and Measures assist it in gathering pertinent information in the weights and measures area : Therefore, be it

Resolved by the 54th National Conference on Weights and Measures, that the Executive Committee is hereby authorized to conduct a study into the problems that measurement changes might have on the weighing and measuring field and to coordinate its efforts fully with the National Bureau of Standards, and is authorized to take whatever action is deemed appropriate in this matter.

RESOLUTION ON M. W. JENSEN

Whereas, Malcolm W. Jensen has been associated with the weights and measures program for 24 years since he began his service in 1945, in the city of Madison, Wisconsin, and has been with the National Conference on Weights and Measures for 21 years, and

Whereas, Malcolm W. Jensen has devoted his energies to weights and measures matters at the National Bureau of Standards for 18 years, having been appointed to the Office of Weights and Measures in 1951 as Assistant Chief and as Chief of that office in 1961, and

Whereas, M. W. Jensen has served the Conference officers and committee chairmen for 18 years, has served this Conference as its Executive Secretary for 7 years, has brought national attention and recognition to the Conference, and has made the Conference an outstanding example of industry-government cooperation, and

Whereas, "Mac" Jensen has now been appointed to the position of Deputy Director of the Institute for Applied Technology of the National Bureau of Standards: Therefore, be it

Resolved that the National Conference on Weights and Measures does hereby express its gratitude and affection to he whom we all know as "Mac." May he prosper and grow, sure in the knowledge that he has earned the respect and unending devotion of this Nation's weights and measures fraternity.

M. R. Dettler, Chairman
W. H. Naudain
F. M. Gersz
W. T. Deloge
R. T. Williams
J. E. Mahoney
W. E. Czaia
Committee on Resolutions

(On motion of the Committee Chairman, seconded from the floor, the Report of the Committee on Resolutions was adopted by voice vote.)

REPORT OF THE CONFERENCE AUDITING COMMITTEE

Presented by H. E. Smith, *County Sealer of Weights and Measures, San Mateo County, California*

(Thursday, June 12, 1969)

The Auditing Committee met on the morning of June 12 and inspected the financial statements of the Conference Treasurer, Mr. C. C. Morgan. We found them to be complete and accurate.

H. E. Smith, *Chairman*
L. W. Vezina
J. C. Boyd

Auditing Committee

(The report of the Auditing Committee was adopted by voice vote.)

REPORT OF THE TREASURER

Presented by C. C. MORGAN, *City Sealer of Weights and Measures, Gary, Indiana*

(Thursday, June 12, 1969)

Balance on hand July 18, 1968		$7,889.60
RECEIPTS:		
Registration, 371 at $15.00	$5,565.00	
Trade Party from Mr. Lauthan	1,470.00	
Luncheon Tickets	30.00	
Subtotal		7,065.00
Total		14,954.60
DISBURSEMENTS:		
Stephen Leisure's Music	545.00	
Sheraton Park Hotel, Executive Breakfast, Luncheon, Cotillion Room Party, Flowers, Audio Charges and Headquarters Expense	3,446.56	
National Detective Agency Inc., Security Guards	52.50	
Dorothy Snyder, Stamps	16.00	
Washington, Virginia & Maryland Coach Co	72.00	
The C & P Telephone Co	20.20	
R. C. Primley, Liaison	147.20	

Louis Vezina, Education-Comm. Expense	$70.00	
Richard Stickers, Index and Labor	240.40	
Advertisers Mat Service Inc., 1,000 Mats	50.00	
Sheraton Park Hotel, Standing Comm. Expense	368.30	
Franklin Press Inc., I.D. Cards and Receipts	90.60	
Franklin Press Inc., Luncheon Tickets	14.85	
Liaison Committee Expense	514.22	
S & T Committee Expense	762.65	
L & R Committee Expense	523.39	
Lunches & Fashion Show, "Ladies," Cash	212.25	
Miscellaneous Expense Conference Week, Cash	111.47	
Bank Charges	5.11	
Subtotal		$7,262.70
Balance on hand June 1, 1969		7,691.90

Depository: Bank of Indiana

(Signed) C. C. MORGAN, *Treasurer*

(On motion of the Treasurer, seconded from the floor, the Report of the Treasurer was adopted by the Conference.)

PERSONS ATTENDING THE CONFERENCE

Delegates—State, City, and County Officials

ARKANSAS

State ---------- G. E. Miller, Director, Division of Weights and Measures, 421 W. Capitol Avenue, Little Rock 72203

CALIFORNIA

State ---------- R. H. Avena, Acting Chief, Bureau of Weights and Measures, 1220 N Street, Sacramento 95814

County Sealers of Weights and Measures:

- Alameda ---------- R. H. Fernsten, 333 Fifth St., Oakland 94607
- Kern ---------- A. D. Rose, 1116 E. California Ave., Bakersfield 93307
- Los Angeles---------- M. H. Becker, 3200 N. Main St., Los Angeles 90031
- San Diego---------- S. R. Miller, P.O. Box 588, San Diego 92112
- San Mateo---------- H. E. Smith, 702 Chestnut St., Redwood City 94063
- Santa Clara---------- R. W. Horger, 409 Mathew St., Santa Clara 95050
- Ventura ---------- E. H. Black, P.O. Box W, Ventura 93001

COLORADO

State ---------- M. Morrish, Chief, Division of Inspection and Consumer Services, Department of Agriculture, 3130 Zuni St., Denver 80211
E. Prideaux, Supervisor, Weights and Measures Section
H. H. Houston, Director, Oil Inspection Department, 1024 Speer Blvd., Denver 80204

CONNECTICUT

State ---------- F. M. Gersz, Deputy Commissioner, Department of Consumer Protection, State Office Bldg., Hartford 06115
W. B. Kelley, Senior Inspector, Weights and Measures Division

City Sealers of Weights and Measures:

- Hartford 06103---- N. Kalechman, City Hall
- Middletown 06457-- P. Grassi, City Hall, Box 223
- New Britain 06151- A. J. Albanese, City Hall

DELAWARE

Department of Weights and Measures, State Board of Agriculture, Dover 19901

State Inspectors---------- W. C. Baumgardt
R. C. Davidson
F. D. Donovan
W. D. Hudson

J. W. Kane
E. Keeley
R. Simmons

DISTRICT OF COLUMBIA

Weights, Measures, and Markets Branch, Inspection Division, Bureau of Licenses and Inspections, Department of Economic Development, District Building, 1350 E St. NW., Washington, D.C. 20004

District ---------- B. A. Pettit, Chief
K. G. Hayden, Assistant Chief
D. K. Forbes, Supervisor
I. L. Wagner, Supervisor

Inspectors ---------- J. T. Bennick
J. M. Burke
H. J. Douglas
F. C. Harbour
G. P. Kosmos
E. Lee
M. L. Matthews
W. A. Mathews
E. E. Maxwell
F. J. Murray
W. W. Wells

FLORIDA

State ---------- S. D. Andrews, Acting Director, Division of Standards, Department of Agriculture, The Mayo Building, Tallahassee 32304
C. Wooten, Chief, Weights and Measures Section
S. Darsey, Supervisor, Weights and Measures Section, 1118 S. 17th Avenue, Hollywood 33020

Sealers of Weights and Measures:
Jacksonville 32202- H. E. Crawford, Room 203, City Hall
Dade County------ J. C. Mays, Division of Trade Standards, 1114 Courthouse, Miami 33130

GEORGIA

State ---------- C. Attaway, Assistant Director, Weights and Measures Division, Department of Agriculture, Capitol Square, Atlanta 30334

HAWAII

State ---------- G. E. Mattimoe, Chief, Weights and Measures Branch, Department of Agriculture, 1428 South King Street, P.O. Box 5425, Honolulu 96814

IDAHO

State ---------- L. D. Holloway, Supervisor, Division of Weights and Measures, Department of Agriculture, P.O. Box 790, Boise 83701

ILLINOIS

State ---------- G. E. Yard, Superintendent, Division of Feeds, Fertilizers and Standards, Department of Agriculture, 531 Sangamon Avenue, Springfield 62706

City Sealers of Weights and Measures:

Chicago 60610------ Mrs. J. Byrne, Commissioner, Consumer Sales, Weights and Measures, 320 N. Clark St., Room 302

60605------ L. Prendergast, Inspector, Public Vehicle License Commission, Room 105, 1111 S. State Street

INDIANA

State ---------- L. A. Gredy, Director, Division of Weights and Measures, State Board of Health, 1330 W. Michigan St., Indianapolis 46206

R. E. Meek, Consultant

County Inspectors of Weights and Measures:

Bartholomew ----- W. L. Weddle, Room 31 Courthouse, Columbus 47201

Clark ---------- R. W. Walker, Court House Annex, Jeffersonville 47130

Floyd ---------- E. G. Silver, City-County Building, Room L–244, P.O. Box 362, New Albany 47150

Grant ---------- H. Cline, P.O. Box 421, Marion 46592

Knox ---------- W. D. Liddil, Court House, Vincennes 47591

Lake ---------- N. Bucur, 524 Roosevelt St., Gary 46404

LaPorte ---------- E. Hanish, 2702 Franklin St., Michigan City 46360

Madison ---------- C. W. Moore, Box 84, Lapel 46051

Marion ---------- E. H. Maxwell, 2001 Northwestern Avenue, Indianapolis, 46204

Marshall --------- G. W. Schultz, Route #1, Bremen 46506

Porter ---------- R. H. Claussen, Room 13 Courthouse Valparaiso 46383

St. Joseph--------- C. S. Zmudzinski, Room 14–A, Courthouse, South Bend 46601

Tippecanoe -------- W. McMurry, P.O. Box 444, Lafayette 47902

Vanderburgh ------ L. L. Lehr, 1557 S. Lodge Avenue, Evansville 47714

City Sealers of Weights and Measures:

Anderson 46011---- E. Gadberry, City Hall, P.O. Box 2100

Gary 46407-------- C. C. Morgan, 1100 Massachusetts St.

Indianapolis 46204- W. R. Copeland, Room G–6 City-County Building

South Bend 46621-- B. S. Cichowicz, Central Services Facility—West Wing, 701 West Sample St.

IOWA

State ---------- J. C. Boyd, Supervisor, Weights and Measures Division, Consumer Protection Services, Department of Agriculture, Capitol Building, Des Moines 50319

KANSAS

State ---------- J. F. True, State Sealer, Division of Weights and Measures, State Board of Agriculture, State Office Building, Topeka 66612

KENTUCKY

State ---------- G. L. Johnson, Director, Division of Weights and Measures, Department of Agriculture, 106 W. 2d St., Frankfort 40601

LOUISIANA

State ---------- J. H. Johnson, Director, Division of Weights and Measures, Department of Agriculture, P.O. Box 44292, Capitol Station, Baton Rouge 70801

MAINE

State ---------- H.D. Robinson, Deputy State Sealer, Bureau of Weights and Measures, Department of Agriculture, Capitol Building, Augusta 04330

MARYLAND

State---------- J. E. Mahoney, State Superintendent of Weights and Measures, Department of Markets, State Board of Agriculture, University of Maryland, College Park 20742
R. L. Thompson, Assistant Superintendent
L. H. DeGrange, Field Supervisor
R. W. Glendenning, Inspector
R. L. Halley, Inspector

County Sealers of Weights and Measures:

Montgomery------- M. S. Soward, Chief, Division of Zoning, Permits and Licenses, Department of Inspections and Licenses, 108 S. Perry St., Rockville 20850.
W. B. Griffith, Assistant Chief

Inspectors ---- C. D. Cooley
P. L. Peterson
W. E. Rice

Prince George's---- R. J. Cord, County Service Building, Room 101, Hyattsville 20781

Inspectors ---- A. Gittleman
L. S. Grasso
D. M. Green
R. O'Conner
D. F. Savage
W. P. Wiseman

City Inspectors of Weights and Measures:

Baltimore 21202—— J. F. Brown, 1106 Municipal Building, Holliday and Lexington Sts.
J. W. Fincham

MASSACHUSETTS

State—— W. C. Hughes, Head Administrative Assistant, Division of Standards, Department of Labor and Industries, State House, Boston 02133

City Sealers of Weights and Measures:

Cambridge 02139— A. T. Anderson, City Hall
Everett 02149—— L. L. Elliott, Room 2 City Hall
Fitchberg 01420— W. T. Deloge, 42 Elm Street
Leominster 01453— L. J. Poirier, City Hall
Newton 02159—— J. E. Bowen, City Hall
Somerville 02145— E. L. Mallard, Public Works Building, Franey Road

MICHIGAN

State—— J. L. Littlefield, Chief, Food Inspection Division, Department of Agriculture, Lewis Cass Building, Lansing 48913
C. O. Cottom, State Supervisor, Weights and Measures
J. F. Hartzell, General Supervisor, Weights and Measures

City Sealers of Weights and Measures:

Dearborn 48126— J. A. Hughes, 13030 Hemlock
Detroit 48207—— J. T. Daniell, 1445 Adelaide Street
Holland 49423—— A. Reinink, City Hall
Lansing 48905—— A. N. Reinhart, Jr., 333 N. Cedar Street
Livonia 48154—— R. C. Baumgartner, 15050 Farmington Road
Pontiac 48058—— B. L. Hargraves, 110 E. Pike Street

MINNESOTA

State—— W. E. Czaia, Supervisor, Division of Weights and Measures, Department of Public Service, 1015 Currie Avenue, Minneapolis 55403
R. A. Tharalson, Inspector

City Inspector of Weights and Measures:

Minneapolis 55415— J. G. Gustafson, Room 101–A City Hall

MISSISSIPPI

State—— C. B. Noblin, Deputy Director, Weights and Measures Division, Dept. of Agriculture, State Office Bldg., P.O. Box 1609, Jackson 39205.

MISSOURI

State — J. H. Wilson, Director, Weights and Measures Division, Department of Agriculture, Jefferson City 65102

County Sealer of Weights and Measures:

St. Louis — L. A. Rick, 8008 Carondelet, Clayton 63105

City Sealer of Weights and Measures:

St. Louis 63103 — D. I. Offner, Commissioner, City Hall, Room 414

MONTANA

State — G. L. Delano, Chief Sealer, Division of Weights and Measures, Department of Agriculture, Mitchell Building, Helena 59601

NEVADA

State — R. Rebuffo, Chief Deputy State Sealer, Bureau of Weights and Measures, Department of Agriculture, 350 Capitol Hill Avenue, P.O. Box 1209, Reno 89504

NEW HAMPSHIRE

State — W. J. Tusen, Chief Inspector, Bureau of Weights and Measures, Division of Markets and Standards, Department of Agriculture, 4 Park Street, Concord 03301

NEW JERSEY

State — S. H. Christie, Jr., Deputy State Superintendent, Division of Weights and Measures, Department of Law and Public Safety, 187 West Hanover St., Trenton, 08625

J. R. Bird, Supervisor, Technical Services

A. Del Tufo, Supervisor of Enforcement

C. P. Conrad, Jr., Weights and Measures Assistant

J. M. Katz, Deputy Attorney General, Office of the Attorney General, State House Annex, Trenton 08625

County Superintendents of Weights and Measures:

Bergen — J. A. Pollock, 66 Zabriskie St., Hackensack 07601

Burlington — J. Carnival, 49 Rancocas Road, Mt. Holly 08060

Camden — A. J. Francesconi, Room 403 City Hall, Camden 08101

Cumberland — G. S. Franks, 1142 Landis Avenue, Vineland 08360

N. Di Marco, Assistant Superintendent, Court House, Bridgeton 08302

Essex — W. C. Lesino, 278 New St., Newark 07103

Gloucester — R. J. Morris, Gloucester County Building, Woodbury 08096

Mercer — R. M. Bodenweiser, Court House, Trenton 08607

Middlesex — J. M. Chohamin, County Records Building, New Brunswick 08901

Monmouth	W. I. Thompson, P.O. Box 74, Allenhurst 07711
	J. A. J. Bovie, Jr., Assistant Superintendent, 82 W. Wall St., Neptune City 07753
	G. H. Camoosa, Assistant Superintendent, Freehold 07728
	W. G. Dox, Assistant Superintendent, 216 Maple Ave., Red Bank 07701
	R. E. Nolan, Inspector, Freehold 07728
	R. V. Tomasulo, Inspector, Freehold 07728
Salem	R. B. Jones, Box 24, Salem 08079
Somerset	J. A. Kriney, Administration Building, Somerville 08876
Warren	G. E. Connolly, Court House, Belvidere 07823
	J. P. Burns, Assistant Superintendent
Municipal Superintendents of Weights and Measures:	
Nutley 07110	W. L. Callanan, Town Hall
Passaic 07055	P. Devries, City Hall
Paterson 07502	W. J. Kehoe, 115 Van Houten St.
	W. Caffrey, Assistant Superintendent
Trenton 08608	R. J. Boney, City Hall Annex, 324 E. State Street

NEW MEXICO

State	C. B. Whigham, Chief, Division of Markets, Weights and Measures, Department of Agriculture, Box 3170, Las Cruces 88001

NEW YORK

State	F. J. Fallon, Director, Bureau of Weights and Measures, Department of Agriculture and Markets, State Campus, Albany 12226
	K. R. Gridley, Inspector
County Sealers of Weights and Measures:	
Nassau	J. A. Occhiogrosso, 160 Old Country Road, Mineola 11501
	A. W. Weidner, Jr., Assistant Sealer
City Sealers of Weights and Measures:	
Glen Cove 11542	E. T. Hunter, City Hall
Ithaca 14850	E. P. Nedrow, 108 E. Green St.
New York 10013	M. Greenspan, 80 Lafayette Street
Syracuse 13207	J. M. Byrne, 101 N. Beech St.
White Plains 10601	T. E. Latimore, 279 Hamilton Street
Yonkers 10701	S. J. Di Mase, City Hall

NORTH CAROLINA

State	J. I. Moore, Superintendent, Weights and Measures Division, Department of Agriculture, P.O. Box 2281, Raleigh 27602
	M. L. Kinlaw, Supervisor
	G. F. Hall, Inspector, Route 9, Box 209–K, Charlotte 28208
	S. Dewitt, Gasoline and Oil Inspection Division, 321 McClure Circle, Charlotte 28214

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OHIO

State ---------- F. P. Gallo, Chief, Division of Weights and Measures, Department of Agriculture, Reynoldsburg 43068

County Inspector of Weights and Measures:

Medina ---------- R. W. Searles, Board of Education Building, 137 West Friendship, Medina 44256

City Sealers of Weights and Measures:

Akron 44304---------- A. J. Ladd, 69 N. Union St.

Columbus 43223---- C. R. Mercurio, 220 Greenlawn Avenue

Toledo 43624---------- T. E. Fought, 565 N. Erie St.

OKLAHOMA

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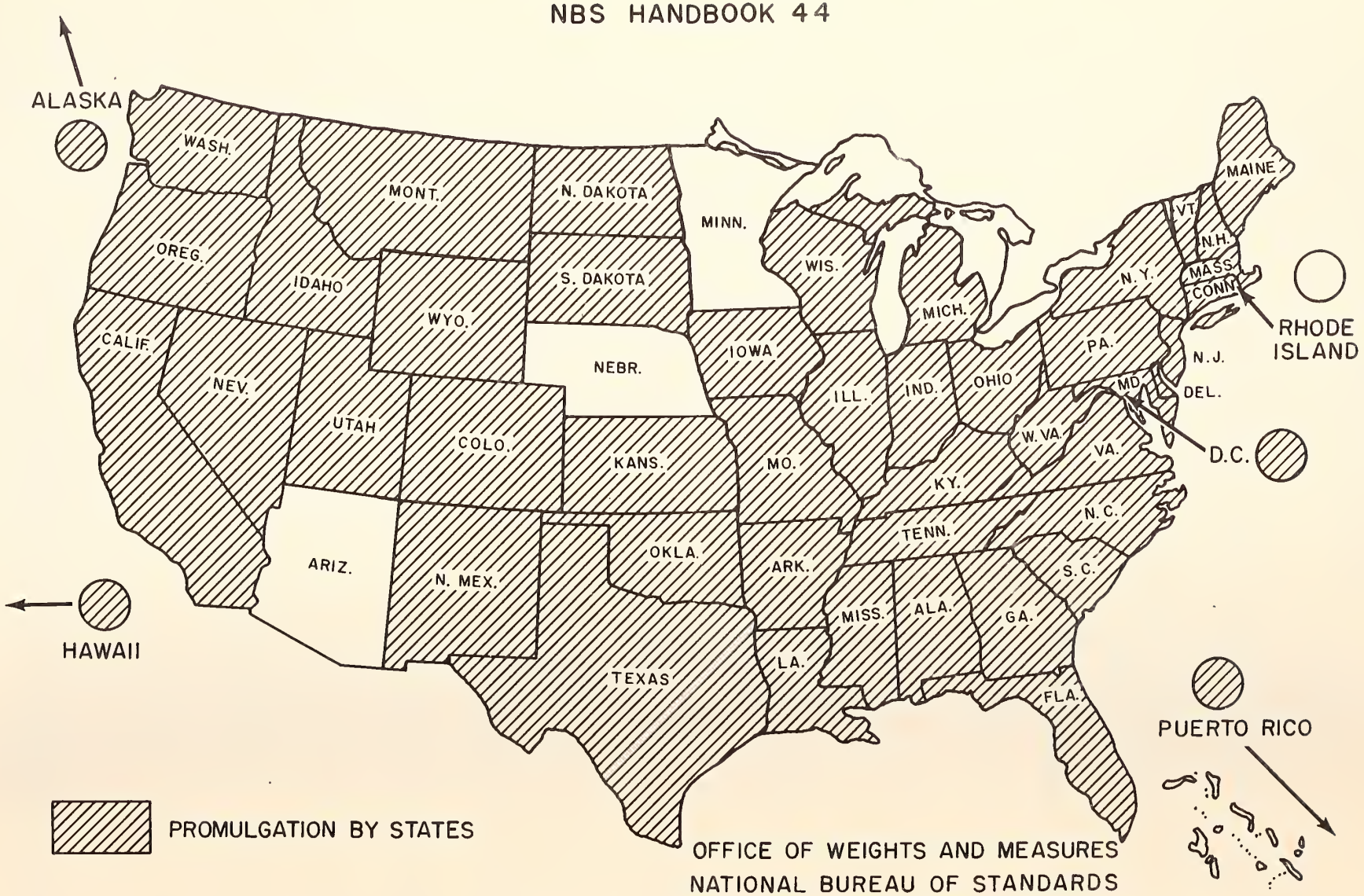
D. Marcus, Attorney.
Winslow Government Standard Scale Works, Inc.:
C. E. Ehrenhardt, President, P.O. Box 1523, Terre Haute, Indiana 47808.

OTHER GUESTS

Mrs. Virginia H. Knauer, Special Assistant to the President for Consumer Affairs.
W. Muhe, Director, Technical Offices, Physikalisch-Technische Bundesanstalt, 33 Braunschweig, Bundesalle 100, Germany.
L. J. Gordon, Director, Weights and Measures Research Center, Denison University, 117 Locust Place, Granville, Ohio 43023.
W. A. Scheurer, 2146 Elgin Road, Columbus, Ohio 43221.
J. J. Seres, 84 Rosary Avenue, Lakawanna, New York 14218.
H. H. Wright, Box 5, Lyons, New York 14489.



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