



NCWM - NEWS

National Conference on Weights and Measures

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Chairman's Column

Jerry Buendel, NCWM Chair — Washington State Department of Agriculture



Dear NCWM Members,

The 101st NCWM Annual meeting is quickly approaching. Our meeting will begin on July 24th in Denver, Colorado at the Grand Hyatt Denver. There will be much debate and discussion on a number of changes including proposals to amend the packaging and labeling regulation, method of sale regulation as well as the continuation of the debates on compressed and liquefied natural gas and much more. We'll have some informative sessions on the U.S. Mint, Transportation Network Systems and regulatory considerations for legalized marijuana. You'll also see good progress on this year's theme, NCWM-Strengthening a Progressive Organization.

The three standing committees have been working diligently throughout the year to prepare the agenda items for your consideration and debate. In addition, a number of groups have been focusing on specific issues as a means of expediting the work of the committees. Because our work has grown more complex, and the number of groups increased, the Board issued a new policy to differentiate between the types of groups and set guidelines for their formation, operation and reporting. You can see the policy, Subgroups Supporting the Work of the Organization, Policy No. 1.5.1. on our recently improved website.

I would like to make you aware of the progress we've made on the three areas I asked that we focus on this year. Each of the goals has required extra effort by our members and I want to recognize them for responding to the challenge. The first area was taking a look at how we develop standards and conduct our business so we can quickly and responsibly respond to a rapidly changing marketplace. I appointed a task group chaired by John Gaccione that included representatives from each region, the AMC and NIST. The group was charged with looking at our current ways of doing business and identifying bottlenecked areas. They were also charged to suggest some model standard setting processes we can look at during the next few months. The group is making progress and expects to have a report ready for the upcoming NCWM Annual Meeting.

Another area we are focusing on is building on the success of the Professional Certification Exams to develop basic competency exams which can be used by jurisdictions to certify service technicians and to assure newly hired regulatory inspectors are progressing and are competent to begin their official duties. The Professional Development Committee, under Angela Godwin's leadership and with Ross Anderson's efforts, has conducted several web meetings and is planning to circulate the modules they developed among service companies and state directors to see if they are on target. The PDC is also building question banks and reworking some of the questions from the proficiency exams to use in exams. The third area of focus involves the Tool Kit Work Group led by Stephen Benjamin.

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Chairman's Column (cont.)

Stephen obtained a grant from the AMC and they are part way through shooting a video on scales and have developed a script for a video on net content inspection.

I've attended all of the regional conferences this year and very much appreciate the expertise, thoughtful debate, networking and training that comes together to develop proposals and improve our ability to meet our responsibilities. The discussions both formal and informal make all of us - regulatory officials, industry members and NIST experts - better in countless ways.

Special thanks go to the NIST staff and our NCWM team which does so much to provide subject matter expertise, technical and logistical support to the membership throughout the year. The use of teleconferences, web based meetings and collaboration software tools have made a big difference in helping us meet our ever growing challenges.

We will be doing serious work in Denver but we'll also have opportunities for enjoyment. Our hotel is near the state capital, Larimer Square and for those that choose to venture further, the Rocky Mountains. Our outing on Wednesday night will be held at Mile High Stadium, home of the Denver Broncos. We'll enjoy a casual buffet dinner and have access to the playing field sidelines for some friendly competition including some exciting extras to make the event memorable.

I look forward to seeing you in the Mile High City!



— Jerry Buendel, Chairman,
Washington State Department of Agriculture

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Special Event at Sports Authority Field at Mile High!

Wednesday, July 26, 2016



During the 101st NCWM Annual Meeting, join us for a unique experience at the home of the Denver Broncos! This is an all inclusive evening of food, fun and entertainment. Built at an elevation of 5,280 feet above sea level, the Sports Authority Field at Mile High boasts as stunning view of the Rockies to the west and Denver's skyline to the east.

At the event, we will enjoy dinner and drinks before attendees are split into teams to participate in a number of fun games located around the field.

Don't miss out on this exciting event!

Register today at www.ncwm.net/sems/event_detail/2016-annual-co.



2016 Publication 16 Available!

Includes complete reports of the Standing Committees, NTEP Committee, Nominating Committee and Board of Directors.

Visit www.ncwm.net/meetings/annual/publication-16

NTEP Column: State Director's Use of NCWM Publication 14

By Jim Truex, NTEP Administrator

This year, as in previous years, every State Director was sent a complimentary complete copy of NCWM Publication 14 on a CD. Hopefully, the CD does not get put on a shelf or in a drawer, never to be looked at again. This article will address the importance of Pub 14 to the state offices and what the State Director, or their designee, should become familiar with in the Publication.

NCWM Pub 14 is published and split into four major categories: 1) NTEP Administrative Policy, 2) Grain Moisture Meters and Near Infrared Grain Analyzers, 3) Measuring Devices, and 4) Weighing Devices. As many of us know, Pub 14 was not designed for use by the field inspector. Rather, it contains the technical requirements and checklists used by the NTEP technicians when they perform evaluations. State Directors should know it also contains many administrative policies and technical policies, developed over the years, which are critical to the enforcement of NTEP.

Most U.S. states require commercial weighing and measuring devices be traceable to an NTEP Certificate of Conformance. These states are commonly referred to as NTEP states. Pub 14 contains information pertinent to the administration of state laws, regulations and/or rules pertaining to type evaluation.

Pub 14 Administrative Policy includes information about:

- Devices to be Submitted for Type Evaluation
- One of a Kind Devices
- Provisional Certificates of Conformance
- Certificate Status (Active, Inactive, Withdrawn)
- Conformity Assessment
- Use of the NTEP Logo
- The US/Canada Mutual Recognition Agreement

Pub 14 Weighing Devices includes information about:

- Influence Factor Testing (Handbook 44, Scales Code, T.N.8.)
- Certificate Parameters Based Upon what was Evaluated by NTEP
- Substitution of Load Cells in Scales
- NTEP Testing of Retrofit Kits for Scales
- Typical Features or Parameters to be Sealed and NOT required to be Sealed
- Acceptable Abbreviations / Symbols

You may know it is incorrect to use a weighing/load-receiving element NTEP certified for an nmax (maximum number of divisions) of 5000 in a 10 000 division system, but did you know *NCWM Pub 14, Weighing Devices, Digital Electronic Scales Technical Policy* specifies:

1) The placement of a load cell in the steelyard rod to change from a mechanical to an electronic indicator is an acceptable modification of type that does not require NTEP evaluation.

2) Replacement or modification of the levers in a mechanical scale for the purpose of installing load cells is a modification of type and is not covered by the original NTEP certificate for the device.

3) An NTEP certificate can be issued to a company for a scale retrofit kit that significantly changes the original design of another manufacturer's device. However, a full NTEP evaluation must be conducted and a certificate issued for the retrofit.

Pub 14 Measuring Devices includes information about:

- Product Categories and Families for Meters
- Certificate Parameters Based Upon what was Evaluated by NTEP
- Use of Compact Provers
- Interfacing Indicators and Measuring Elements with CCs but Not Tested Together

You may know it is incorrect to use a meter NTEP certified and marked for a maximum flow rate of 60 gpm in a 100 gpm system, did you know *NCWM Pub 14, Measuring Devices Technical Policy* specifies:

1) For a vehicle tank meter system, a serial number is required for both the meter and the indicator (register).

2) An NTEP laboratory must evaluate a mass flow meter with volume units to include volume units on the NTEP certificate.

3) If a meter is to be used in both stationary and vehicle-mounted applications, both must be noted on the NTEP certificate. In other words, a certificate for a meter stating for stationary use in the "For" box and/or "Application" section of the certificate is not certified for vehicle-mounted use unless that use is also stated on the certificate.

NTEP has received a number of communications from states recently asking for answers to questions similar to those referenced above. This is good because it means regulators are paying attention to what is happening and questioning issues in their state. NTEP is happy to help point the states and other agencies to the pertinent NTEP criteria that apply. Pub 14, like Handbook 44, is very technical in nature. Nonetheless, every State should have a technical person that is familiar with Pub 14 and its technical content. Every State should have someone with working knowledge of the NTEP certificate format and an understanding of how to read and interpret information provided on the certificate.

If you have questions or would like to discuss the content of this article contact Jim Truex at jim.truex@ncwm.net.

101st NCWM Annual Meeting

July 24 - 28, 2016 | Denver, Colorado

The Annual Meeting is the high point of our year where all the hard work pays off. At this meeting, stakeholders will debate important proposals to amend the United States standards for weights and measures. When the debating is done, the votes will be cast.

Our committees have their work cut out for them with some very full and diverse agendas. Committee agendas can be viewed at www.ncwm.net/meetings/annual/publication-16.

Special Presentations Include:

The United States Mint at Denver - Gold, Coins and Embezzlement

This will be a unique and interesting presentation on the history of the mint, tying in with weights and measures including the weighing of coins and balancing practices.

Understanding Transportation Network Systems

Representatives of Uber and Lyft will provide insight into their business models and the services they provide as they seek uniform standards for the use of GPS in calculating fares based on time and distance.

Regulatory Considerations for Legalized Marijuana

This discussion will delve into the regulatory challenges of legalized marijuana, including determination of scale suitability, package labeling, and verification of net weight compliance.

Our Special Event Will Be:

The Sports Authority Field at Mile High

Join us for this unique experience at the home of the Denver Broncos! This is an all inclusive evening of food, fun and entertainment.

The Grand Hyatt Denver Hotel is an ideal location for our meeting. We will be in heart of downtown near the most popular cultural, historic, and entertainment venues Denver has to offer.

Make your reservations before **July 1, 2016** and register online at www.ncwm.net/sems/event_detail/2016-annual-co.

See you in Denver!



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- Calculates SEL and Standard Deviation
- Dynamically calculates Rc/Rt for tare
- Calculates conversion factors for volume inspections
- Calculates Cost Error, Average Error, Average Cost Error % Error



Device Inspection

WinWam Device Inspection Software is designed to perform and record Handbook 44 inspections. WinWam Device Inspection Software supports all devices specified in Handbook 44 including but not limited to: scales, (apothecary, computing, livestock, shipping, vehicles, etc.) meters, LP Gas, LMD, linear devices, timing devices, etc. Whether acceptance or maintenance WinWam calculates tolerances for nearly all tests.

WinWam Device Inspection Software provides a comprehensive database of business establishments with a complete inventory of devices. Full detail inspection data allows management the ability to better measure economic impact of the W&M program.

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WinWam Price Verification Software is designed in accordance with NIST Handbook 130. The Software runs standalone or with a handheld scanner. Software calculates error, lot cost error, net dollar error and calculates Over / Under Ratio. Accommodates Intentional Under-charge and Not On File.

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NCWM thanks you all
for getting involved and
making a difference
in the field of
weights and measures!



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Save the Ears!

By Elizabeth Koncki, Maryland Department of Agriculture

Noise-related hearing loss has been listed as one of the most prevalent occupational health concerns in the United States for more than 25 years¹.

- What is noise?
- What are some common noises on the job?
- How can noise affect me?
- Is it a concern?
- How do I stay safe?
- What's the best hearing protection?
- What is a hearing conservation program?

What is noise?

We generally consider 'noise' any unwanted sound. Sound is a vibration, a fluctuation in the pressure of air which is detected by the human ear and affects the human body.

When sound waves enter the outer ear, these vibrations strike the ear drum and transmit into the middle and inner ear. The inner ear contains a snail-like shaped cavern, the cochlea, which is filled with fluid and lined with microscopic hairs. These hairs move with the vibrations and convert the sound waves into nerve impulses to give us the ability to hear.

What are some common noises on the job?

Most of us are familiar with noises around a particular work area based on the type of business. Many of us work in different places every day due to the nature of our jobs. For most of us, the loudest noises we are exposed to daily is driving on our way to work. In the list below, notice how close to the noise you are and what barrier (distance, inside car) to the sound result in different noise levels reaching your ears.

dBA **Sound Source**²

90	Traffic at 60 mph at zero meters
50-70	Inside a car at 60 mph
70	Traffic at 50 mph at 15 meters
83	Heavy Truck on highway at 15 meters
36-52	Traffic at 50 mph at 100 meters

Here are some other commonly occurring noises found in our daily lives.

dBA **Sound Source**²

52	People eating and talking at 15 meters
58-65	Printer in office at ear
61	Electric nose hair trimmer at ear
94	Power washer at ear
100	Alice Cooper Rock concert at 25 meters
125	Jet at 100 meters

How can noise affect me?

Short-term exposure to loud noise can cause temporary changes. An example is a ringing in the ears (tinnitus) or the feeling of cotton wool in your ears. These short-term problems may go away within a few minutes or hours after the noise is gone. However, repeated exposures to loud noise can lead to permanent tinnitus and/or hearing loss.

Exposure to high levels of noise can cause permanent hearing loss by destroying those hair cells in the cochlea. When the cells are gone, neither surgery nor a hearing aid can help correct this type of hearing loss.

Loud noise can have secondary effects such as interfere with communication, mask over helpful warning tone signals, be a distraction, create stress and create fatigue as ears "tire out".

If you experience noise-induced hearing loss, it may limit your ability to hear high frequency sounds, understand speech and impair your ability to communicate. The effects of hearing loss can be profound for a person, because hearing loss can interfere with the ability to participate in social activities.

Is it a concern?

Noise and vibration can harm workers when they occur at high levels, or continue for a long time. OSHA has some rules of thumb for you to consider if noise may be a problem. Noise may be a concern in your workplace if you:

- Have to shout to be heard by someone an arm's length away.
- Experience temporary hearing loss.
- Hear ringing or humming in your ears after you leave work.

If there is a concern, a noise survey with proper sound detecting equipment may be the next step. A little bit more about how noise is measured and what limits are set will give you an idea of how to handle noise.

Noise is measured in units called decibels. Decibel A-weighted sound levels (dBA) are often used for comparison analysis as it matches the perception of loudness by the human ear. Decibels are logarithmic which means a small change in the decibel number results in a large change in the amount of noise and hence the potential for hearing damage.

OSHA has set legal limits on noise exposure in the workplace. These limits are based on a worker's time

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Save the Ears! (cont.)

By Elizabeth Koncki, Maryland Department of Agriculture

weighted average over an 8 hour day. With noise, OSHA's permissible exposure limit (PEL) is 90 dBA for all workers for an 8 hour day.

The OSHA standard uses a 5 dBA exchange rate. This means that when the noise level is increased by 5 dBA, the amount of time a person can be exposed to a certain noise level to receive the same dose is cut in half. For example OSHA permits 8 hours at 90 dBA, but only 4 hours at 95 dBA and 2 hours at 100 dBA levels. National Institute for Occupational Safety and Health (NIOSH) recommends a 3 dBA exchange rate so that every increase by 3 dBA doubles the amount of the noise and halves the recommended amount of exposure time.

How do I stay safe?

First, control the noise. Then reduce worker exposure and noise reaching the ear. The use of controls should aim to reduce the hazardous exposure to the point where the risk to hearing is eliminated or minimized. With the reduction of even a few decibels, the hazard to hearing is reduced, communication is improved, and noise-related stress is reduced. There are three types of controls.

Engineering controls reduce sound exposure levels by making related physical changes at the noise source or path to reduce the noise level at the worker's ear. In some instances the application of a relatively simple engineering noise control solution reduces the noise hazard to the extent that further requirements (e.g. hearing conservation program, provision of hearing protectors, etc.) are not necessary. Examples include some of the following:

- Choose low-noise tools and machinery
- Maintain and lubricate machinery
- Place a barrier (sound wall) between the noise source and employee
- Enclose or isolate the noise source.
- Administrative controls reduce or eliminate the worker exposure to noise by changing the workplace. Examples include:
- Operating noisy machines during shifts when fewer people are exposed.
- Limiting the amount of time a person spends at a noise source.
- Providing quiet areas where workers can gain relief from noise sources
- Restricting worker site to a suitable distance away from noisy equipment.

Controlling noise exposure through distance is often an effective, yet simple and most inexpensive administrative control. This control may be applicable when workers are present but are not actually working with a noise source or equipment. Increasing the distance between the noise source and the worker,

reduces their exposure. In open space, for every doubling of the distance between the source of noise and the worker, the noise is decreased by 6 dBA.

Hearing protection devices (HPDs) decrease the intensity of sound that reaches the eardrum. They come in two forms:

- Earplugs, small inserts fitted into the outer ear canal
- Earmuffs, which fit over the entire outer ear

HPDs are considered an acceptable but less desirable option to control exposures to noise and are generally used after other controls are determined to not be feasible. Hearing protection will enhance your ability to hear speech in very noisy environments by reducing sound level.

When dealing with noise, you can use equipment in controlled areas, move away from the noise and protect your ears.

What's the best hearing protection?

Each person's ear shape and size are different. Therefore, you should choose a hearing protection product that works well for you.

Earplugs work by sealing the circumference of the entire ear canal.

Earmuffs work by forming an air seal so the entire circumference of the ear canal is blocked.

Both earplugs and muffs are approximately equal as both can reduce noise 15 to 50 dB when properly fitted. Remember to read the information provided by the manufacturer for the noise reduction rating and proper use to achieve the rated protection. You can wear plugs and muffs at the same time and your protection will increase by about an additional 10dB. Cotton balls or tissue paper stuffed into the ear canals are very poor protectors as they reduce noise only by approximately 7 dB, which is very low protection and may irritate the ear.

Whichever HPD you choose, the most important part is to use them properly. Always make sure protection is on and fit is good before entering a noise hazard area. A hearing protector that gives an average of 30 dB of noise reduction if worn continuously during an 8-hour workday becomes equivalent to only 9 dB of protection if taken off for one hour in the noise. This is because decibels are on a logarithmic scale, and there is a 10-fold increase in noise energy for each 10 dB increase.

Continued on page 14

Save the Ears! (cont.)

By Elizabeth Koncki, Maryland Department of Agriculture

During the hour with unprotected ears, the worker is exposed to 1,000 times more sound energy than when wearing the earplugs or muffs. If workers do not wear or wear protection loosely because they do not fit properly, again they do not provide the rated protection. If there is an incomplete air seal between HPD and ear, then the effectiveness of the protection is compromised and does little good. If you hear your own voice as louder and deeper when wearing hearing protection, this is a good indication the hearing protectors are properly positioned.

Remember, noise exposure is cumulative. So, the noise at home or at play must be counted in the total exposure during any one day. A maximum allowable while on-the-job exposure followed by an exposure to noisy lawnmower or loud music will definitely exceed a safe daily limit. High frequency sound is the most damaging to human ears.

What is a Hearing Conservation Program?

In 1981, OSHA implemented requirements for employers in general industry to implement a Hearing Conservation Program at such workplaces/jobs where workers are exposed to a time weighted average noise level of 85 dBA or higher over an 8 hour work shift. Some specific industries, like agriculture, maritime or construction, have specific limits. When the conditions of 85 dBA or higher at 8 hour shift is met, then Hearing

Conservation Programs require employers to measure noise levels, provide free annual hearing exams and free hearing protection, provide training and conduct evaluations of the adequacy of the hearing protectors in use and/or make changes to tools, equipment and schedules so worker exposure to noise is less than the 85 dBA.

The program strives to prevent initial occupational hearing loss, preserve and protect remaining hearing, and equip workers with the knowledge and hearing protection devices necessary to protect them. For more information on hearing conservation program, see OSHA's website <https://www.osha.gov/dts/osta/otm/noise/hcp/>.

Sources:

- Protecting Yourself from Noise in Construction - Pocket Guide (PDF). OSHA Publication 3498, (2011).
- OSHA Technical Manual (OTM) Chapter - Noise. OSHA Directive TED 01-00-015, (2013, August 15).
- ¹ www.osha.gov. US Department of Labor on March 28, 2016
- HearForever.org on March 28, 2016. A Howard Leight by Honeywell initiative.
- ² Noise Navigator™ Sound Level Database. June 26, 2015, Version 1.8

NCWM Membership Benefits

Complimentary:

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101st NCWM Annual Meeting Registration Form

July 24-28, 2016 / Denver, Colorado

Please complete registration form legibly. Illegible forms may delay processing times. Submit form in one of the following ways:

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P. 402.434.4880

F. 402.434.4878

ATTENDEE INFORMATION

Select Registration Option:

☐ **NCWM Member**

☐ **Non-Member**

☐ **Retired Member:** A person with retired member status.

☐ **Observer:** A first-time attendee; allows full participation in all sessions and discussions, but does not include voting privileges or special events.

☐ **1 Day (Sunday):** Attendee will have meeting privileges on Sunday ONLY.

☐ **1 Day (Tuesday):** Attendee will have meeting privileges on Tuesday ONLY.

Member ID #:	Name:	Name for Badge:	
Organization / Jurisdiction:		Title:	
Street Address:			
City:	State:	Zip Code:	Country:
Phone Number:	Email Address (Required):		

ATTENDEE'S GUEST INFORMATION

Name:	Name for Badge:
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Note: a \$25.00 fee will be added to on site registrations

	Registration Fees Before (7/1/16)	Registration Fees After (7/1/16)	Chairman's Reception	Light Breakfast	Special Event
NCWM Member	\$400.00	\$450.00	included	included	included
Non-Member	\$475.00	\$525.00	included	included	included
Retired Member	\$0.00	\$0.00	included	included	\$60.00
Observer	\$200.00	\$250.00	\$35.00	included	\$60.00
Attend Sunday ONLY	\$100.00 (member) \$150.00 (non-member)	\$100.00 (member) \$150.00 (non-member)	included	N/A	N/A
Attend Tuesday ONLY	\$100.00 (member) \$150.00 (non-member)	\$100.00 (member) \$150.00 (non-member)	N/A	included	N/A
Guest	N/A	N/A	\$35.00	\$30.00 (4 day package)	\$0.00 under age 5 \$30.00 ages 6-13 \$60.00 ages 14+

SPECIAL EVENTS

Will <u>You</u> Be Attending the <u>Chairman's Reception</u> : <input type="checkbox"/> Yes <input type="checkbox"/> No	Will <u>Your Guest</u> Be Attending the <u>Chairman's Reception</u> : <input type="checkbox"/> Yes <input type="checkbox"/> No
Will <u>You</u> Be Attending the <u>Special Event</u> : <input type="checkbox"/> Yes <input type="checkbox"/> No	Will <u>Your Guest</u> Be Attending the <u>Special Event</u> : <input type="checkbox"/> Yes <input type="checkbox"/> No

NCWM *Trivia*

See how many of these weights and measures questions you can answer!

1) One barley corn equals:

- A. 1.2 inches
- B. 1/5 of an inch
- C. 1.5 inches
- D. 1/3 of an inch

2) One American gill equals:

- A. 1 ½ cup
- B. 1 1/3 cup
- C. ½ cup
- D. 2 cups

3) One dram equals:

- A. 3 scruples
- B. 2 scruples
- C. 1.5 scruples
- D. 2.5 scruples

4) One nautical mile equals (approximately):

- A. 5,280 feet
- B. 7,180 feet
- C. 4,380 feet
- D. 6,076 feet

5) At what temperature does the Celsius and Fahrenheit scales match?

- A. 60°
- B. -40°
- C. 106°
- D. -180

6) One hand equals:

- A. 6 inches
- B. 5 inches
- C. 4 inches
- D. 3 inches

7) Which weighs more, an ounce of gold or an ounce of feathers?

- A. Gold
- B. Feathers
- C. Same

8) Which weighs more, a pound of gold or a pound of feathers?

- A. Gold
- B. Feathers
- C. Same

9) What does a Geiger counter measure?

- A. Geigers
- B. Radioactivity
- C. Lumens
- D. Atomic Density

10) What is a Theodolite used for?

- A. Measuring temperature
- B. Surveying
- C. Measuring speed
- D. Keeping score

11) An Electroscope is used to measure:

- A. Sine wave frequency
- B. Beta particles
- C. Electric charge
- D. Electric current

12) An Altimeter is used to measure:

- A. Depth
- B. Longitude
- C. Gratitude
- D. Altitude

13) A Barometer measures:

- A. Atmospheric pressure
- B. Water pressure
- C. Lux
- D. Humidity

14) A Sextant was a navigational aid for sailors.

- A. True
- B. False

15) A Seismometer measures:

- A. Seismic activity
- B. Dispersion
- C. Geographical imbalances
- D. Waist size

16) Which of the following cannot be measured with an old-fashioned Oscilloscope?

- A. Frequency
- B. Peak voltage
- C. Wave period
- D. RMS voltage

Source: www.funtrivia.com



National Conference on Weights and Measures

1135 M Street, Suite 110 / Lincoln, Nebraska 68508

Event Calendar

May 2016

NEWMA Annual Meeting

Portland, Maine
May 16 - 19

CWMA Annual Meeting

Rapid City, South Dakota
May 23 - 26

July 2016

NCWM 101st Annual Meeting

Denver, Colorado
July 24 - 28

August 2016

NTEP Weighing Sector Meeting

Denver, Colorado
August 23 - 24

September 2016

WWMA Annual Meeting

Honolulu, Hawaii
September 11 - 15

Be sure to mark your calendar for all the upcoming NCWM, NIST and regional meetings.

September 2016 (cont.)

NTEP Grain Analyzer Sector Meeting

Kansas City, Missouri
September 13 - 14

NTEP Software Sector Meeting (Joint Meeting)

Kansas City, Missouri
September 14

NTEP Measuring Sector Meeting

Denver, Colorado
September 20 - 21

October 2016

CWMA Interim Meeting

St. Charles, Missouri
October 3 - 5

SWMA Annual Meeting

Fort Worth, Texas
October 16 - 19

NEWMA Interim Meeting

Portsmouth, New Hampshire
October 25 - 26

*Further meeting details will be announced closer to the meeting dates at www.ncwm.net/meetings.