We're only a short time into the new year and some of our goals are already accomplished. An important new product has been published, namely the ANSI/NCSL Z540-1 Handbook. You should have already received your Member Delegate copy. This valuable document, intended for the interpretation and application of the ANSI/NCSL-Z540-1 Standard, will further support the continued adoption of this widely recognized single standard. Despite it's wide recognition last year, NCSL successfully defended the Z540-1 Standard against a view that the Standard was too narrow in scope and beneficial to only a few. The facts regarding this issue and the complete exoneration of NCSL are the subject of an article on page 24 by Jack Ferris, of Consumer's Power Co., the chairman of the ANSI/NCSL writing committee, re-printed from Cal Lab magazine.

At the January Board of Directors meeting, a new Recommended Practice on Computer Systems in Metrology (RP-13) was approved for publication. Written by the Utilities Committee under the direction of John Ragsdale, of TVA, the document has wide appeal in all industry sectors and is a welcome addition to the NCSL library of Recommended Practices.

The revision of RP 1, “The Establishment and Adjustment of Calibration Intervals,” was also approved for publication. Both of these documents will soon be distributed to Member Delegates.

International affairs are still dominated by regulatory matters causing barriers to trade, and in particular the “CE” mark as a necessary condition for goods to enter the European Union (EU). CE is the symbol used to signify compliance, allowing products to be placed on the market in the EU. New directives for tighter electro-magnetic compliance became effective January 1, 1996. The direction in which we are heading appears contrary to all the efforts of international organizations to encourage cooperation in the field of metrology. This view was eloquently stated by Dr. Peter Heydemann, of NIST, in his recent keynote address at the Measurement Science Conference in Anaheim CA, when he said that, “the spirit of Bretton Woods is lost.” He went on to say that industry and governments will need metrologists and standards experts to help overcome technical trade barriers. Peter’s address is reprinted on page 12.

The future of Standards and Calibration programs at NIST continues to be uncertain. As this is an election year, members of Congress may not be as focused on the issue of the Department of Commerce reorganization or NIST in particular. Their emphasis is not always what NCSL feels is best for these programs. There are still lingering possibilities of more shutdowns if appropriations are inadequate and dismantling of NIST programs is still a possibility. Your earlier letters were most valuable in identifying our needs to the Congress. We have continued to maintain our contacts on Capitol Hill and we will be sure to keep you informed on this most important issue.

Your cooperation was vital and has been most appreciated.

NCSL has recently honored two liaison organizations on the occasion of their significant milestones. On behalf of NCSL, Bill Simmons presented an award acknowledging the 50th anniversary of ISA (Instrument Society of America), at their annual conference held in New Orleans. I was honored to present an award to MSC (Measurement Science Conference), at their 25th anniversary conference in Anaheim, California.

Preparations for this year’s NCSL Conference in Monterey, CA, are proceeding on schedule and the program will be published and distributed by April 1st. A strong technical program is offered, including a specialized track on invited technical papers. Opportunities for networking have been expanded with a new look social event in the form of an International Evening Mixer. Delegates will be able to sample a unique California event, while having the opportunity to meet more of their contemporaries in a relaxed environment. Hope to see you there.

(continued on page 18)
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NOW IS THE TIME TO PLAN FOR THE CALIFORNIA COAST IN AUGUST

THE 1996 ANNUAL NCSL CONFERENCE
MONTEREY CONFERENCE CENTER
MONTEREY, CA
AUGUST 25-29, 1996

PREPARING METROLOGY FOR THE NEXT MILLENNIUM

CONTACT: Wilbur Anson, NCSL Business Office, 303-440-3339

EDITOR’S MESSAGE:

Newsletter Survey

Thanks to those 20 readers who took the time to fill out the newsletter survey form in the January issue. It has been about 5 years since the last survey and I was wondering if I was missing anything that you readers want to read.

I’ve summarized the returns on page 9, and as you will see, the responses are about down the middle. They do give me a little guidance on the value ranking of the different newsletter chapters. People seem to like the addition of the Internet page and the Looking for Solutions page.

So, while the response was disappointing, I go on with what I have and assume that if the publication is not meeting your needs, you are grown-up enough to know that you can always contact me without waiting for the anonymity of a survey.

E-Mail Survey

It’s somewhat the same story on the request I made to all you readers who use E-mail. In addition to the list of Board Members who have E-mail listings in the back of each newsletter, I got back about 30 new addresses since January. For me that was pretty disappointing.

Yet, Jon Titus, Editorial Director of Test and Measurement World Magazine estimates that about 35 to 40% of his readers are on the Internet, either at home or through their company communications networks. He says that although his magazine is promoting communication on the Internet, that many readers don’t choose to participate at this time.

(Continued on page 18)
HIGHLIGHTS OF THE BOARD MEETING

Erawan Garden Hotel
Indian Wells, CA
Jan 29-Feb 2, 1996

The first quarter 1996, National Conference of Standards Laboratory Board of Directors' Meeting was held 29 January - 02 February, 1996 at the Erawan Garden Hotel, Indian Wells, CA.

Bill Doyle welcomed everyone, expressing his appreciation for the Board's outstanding support in 1995 and making him a believer of the synergy of teamwork. He then presented the President's gavel to Tony Anderson and the meeting was then turned over to the new President. After introductions, Tony Anderson presented Bill Doyle with mementos as the outgoing President for 1995.

Bill Doyle presented the 1995 President's Report.

A motion was made by Bill Doyle to formally accept Gary Hysert as the NRC Representative to the NCSL Board of Directors to replace Dr. Roy Van Koughnett. The motion was seconded by Tony Anderson and was accepted without debate.

Tony Anderson presented the Executive Vice President's report. LRP (Long Range Plan) and key initiatives were discussed.

Bill Doyle presented the Past President's Report for Ralph Bettermann.

Max Green's written Secretary's report was presented by Bill Doyle.

Kevin Ruhl presented the Treasurer's report.

A motion was made by Kevin Ruhl to accept the Corporate Resolutions as presented. The motion was seconded by Ed Nemeroff and was accepted without debate.

A motion was made by Tony Anderson to increase the Wildhack Award budget to $1,500.00. The motion was seconded by Kevin Ruhl and was accepted without debate.

Bill Doyle presented a status report on the Ad-Hoc Committee for the Dr. Joe Simmons Memorial Fund.

Dr. Peter Heydemann presented the NIST Report. Activities and items discussed were as follows:

NIST is funded for 45 days, as of now. NIST North new building is $20 and there is $60M in construction for a Clean Lab.

Roy Kenner is to go to Department of Commerce as temporary Assistant Secretary Services.

Tony Anderson commented on an observation from Speaker of the House, Mr. Newt Gingrich's office. Top level administration is not aware of NIST and it's role in commerce.

Graham Cameron presented a NRCC-INMS Representative's Report. Items discussed were as follows:

NRC has been reorganized. One of the wide ranging program changes was the transfer of the Quality Assurance Environmental Analytical Measurement and Special Analytical Services Group of the Institute for Environmental Research and Technology to the Institute for National Measurement Standards. The Group did not physically move, but did change it's name to Chemical Metrology. It is now one of eight groups within the INMS organizations, thus further consolidating NRC's measurement standards-related activities.

Graham Cameron is to provide information to the Board of Director's on those European Standards Committees that the NCSC should become involved with.

Ms. Sharrill Dittmann presented the North American Calibration Cooperation (NACC) Report. Mr. Jim Cigler is the new NACC Chairman. (CIM) Inter-America - CENAM chair met at the "Metrology for the America's" Symposium and also at NIST. The uncertainty analysis for mass will be conducted.

Dr. Tom Huttemann presented the VP Conference Management's Report.

He completed the Conference Arrangements Manager selection process. Bill Simmons was offered and accepted the position.

Jeff Taylor presented the 1997 Conference Director's Report. Theme for 1997 will be: "Metrology: The Key to Survival".

Graham Cameron presented a written EAL Report.

Ms. Sharrill Dittman was appointed as the NACC/NORAMET Liaison.

Willbur Anson presented the Business Office Report.

NCSL has sold over 6,000 copies of ANSI/NCSL Z540-1-1994 since it's first printing in 1994. The Handbook for the Interpretation and Application of ANSI/NCSL Z540-1-1994 will be distributed during the first two weeks of February, 1996.

The NCSL Business Office now has an internet e-mail address: NCSL-staff@ncsl-hq.org

John Minck has discussed the "NCSL Newsletter" with Tony Anderson's regarding a "35th Anniversary edition. Bill Quigley will coordinate with John.

Bill Simmons presented the Administrative Guidelines and By-Laws Report.

Brian Conroy presented an oral Region 8, LA Section Report. The section is growing, but Mr. Conroy may not be able to continue as a Section Coordinator due to lack of company support.

Brian Fitzpatrick presented the Laboratory Systems Report. See Committee News.

Charlie Motzko presented the EMF Report. Bill Uphoff is handling the speakers for the EMF Track. He has two workshops...
Highlights of the Board Meeting

committed, plus 6 possible papers for the EMF Track in Monterey 96.


Brian Conroy conducted a Workshop at the MSC on the “Interlaboratory Performance Evaluation Using the Youden Diagram Method” with excellent attendance. Software to conduct Youden analysis was distributed during the session.

National Measurement Requirements of Canada: Survey distribution is planned for inclusion with the announcement of the Canadian Spring Regional Meeting. A follow-up report to the July 1994 report, written in December 1995 by Gary Hysert (NRC) was sent to Wayne Sampson. See Committee News.

A motion was made by Ms. Georgia Harris to increase the Intrinsic and Derived Standards Committee budget by $3,000.00 in order to complete the work for the Pressure Recommended Practice. The motion was seconded by Mr. Brian Fitzpatrick and was defeated.

Ms. Georgia Harris relayed that the Canadian Measurement Requirements Reports will be published later after coordination. She will add a section in the “NCSL Newsletter” to cover the use of NIST test numbers, traceability, and the like.

John Wehrmeyer presented a draft position statement on the “Use of NIST Test Numbers” Report. See page 35.

An Action Item was given to Mr. John Wehrmeyer to work with NIST to obtain their approval/endorsement of the NCSL Position Statement on the use of NIST test numbers.

Bill Quigley presented his Industrial Programs Report.

He participated in ASQC-MQD and Z540 Committee meetings and coordinated with Gary Shuler on transition of Industrial Programs and Operations & Marketing duties.

John Ragsdale presented the Utilities Report. A committee meeting was held prior to the MSC.

A motion was made by Bill Quigley to accept the proposed “Software, A Recommended Practice Number 13,” as written, for publication. The motion was seconded by Mr. Don Dalton and was accepted without debate.

Bill Quigley presented the Healthcare Report for George Emerson.

Don Dalton presented the VP of Education & Training Report. See Committee News.

Don Dalton proposed that the LRP be changed as follows:

Move #164, 1996 Goal number 8, “Coordinate the activities of the NCSL grants/s to post-secondary schools”, to #160 Office of the VP E & T.

Add, 1996 Goal number 8, “Coordinate with the NCSL Newsletter” editor to manage the Training Information section of the NCSL Newsletter”.

A motion was made by Don Dalton for the Board to approve the 1996 Scholarships/Awards/Grants to be awarded in the amount of $3,000.00 each to Butler Community College, Community College of Aurora, Hutchinson Technical College, and Amarillo Technical Center. The motion was seconded by Gary Shuler and was accepted without debate.

Dave Abell presented the Vice President’s Quality Programs Report. See Committee News for details.

He gave a presentation on Global Standards Requirements at the “Metrology for the America’s” Symposium in Miami, FL.

A motion was made by Mr. Dave Abell to publish Recommended Practice #1, “The Establishment and Adjustment of Calibration Intervals,” as submitted with minor corrections. The motion was seconded by Dr. Tom Huttemann and was accepted without debate.

Graham Cameron presented the International Measurement Coordination Committee Report. He reviewed progress on the temperature coordination between the various countries.

Tony Anderson presented the Government Affairs Report for Mike Suraci. He will write a letter for the NCCL Members on the dismantling of NIST, as there doesn’t appear to be any positive solution to this dismantling effort that is evident at this time.

Tony Anderson presented a Publications & Eastern Region Report for Frank Bandy.

Jeff Gust has replaced Mr. Jerry Drake as the Northern Indiana Section Coordinator. We need Section Coordinators for Atlanta and Puerto Rico.

John Wehrmeyer presented the Region 2 Coordinator’s Report. The attendance decline that was discussed at the last Board meeting seems to have leveled off. Excellent section meetings were held in Pittsburgh and Upper New York State. The key to successful sectional meetings seems to be quality and focus on the interest of the members.

An Action Item was given to the three Division Vice Presidents to conduct a workshop at the May 1996 Board of Directors’ meeting covering the Region/Section membership requirements for the future.

Woody Tramel and Leon Barnes presented the Central Division Report.

Leon Barnes presented a report as the incoming Central Division Vice President and outgoing Region 11 Coordinator.

All sections in the Central Division, with the exception of Kansas City, held at least two very successful meetings during 1995.

Mike Miskus used the very effective steering committee to govern the Twin Cities Section and has been appointed as the new Region 11 Coordinator.

The Kansas City Section is currently without an active coordinator and we are looking for a Region 6 Coordinator to replace Ronnie Eubanks because of his heavy workload. A Kansas City Section meeting is being arranged for May 1996.
Charles Motzko presented an oral and written Western Division Report.

Jeff Taylor and Ed Nemeroff presented the International Report. May 16, 1996 is the date for the Spring meeting at NRC. David Stevens will Chair the Canadian NMR Program.

There were 225 attendees at the "Metrology for the Americas" symposium. See page 34.

Les Peer's NCSL Canadian Region 12 Report was given.

Gary Shuler presented an oral and written Operations and Marketing Vice President's report. He discussed multiple year memberships as a way of making member payments more efficient.

A motion was made by Gary Shuler to adopt a 6 year award system with the first award issued at the 6 year point and the second at the 12 year point. The motion was seconded by Don Dalton and was adopted with 12 for and 1 against.

Written Liaison Delegate Reports were presented for the following: GIDEP; ASQC; MSC, ISA; ASTM; and A2LA.

Dr. Tom Huttemann provided an oral and written Liaison Report on CORM. See Liaison Reports for details.

Ms. Georgia Harris presented the National Conference of Weights and Measures Liaison Report.

The National Conference on Weights and Measures (NCWM) annual meeting is scheduled for July 14 - 18, 1996 in New Orleans, LA. The NCWM Interim meeting was held January 21 - 25, 1996 in Fort Lauderdale, FL.

Summary of the NCWM, Program Evaluation Work Group was given during the "Metrology on the Internet" session at MSC.

NIST is hosting a Region 3, NCSL meeting on March 7, 1996 during the National "Weights and Measures Week". A tour will be given through the Training and Demonstration Laboratory and someone will speak on Legal Metrology.

The NCWM Fax-On-Demand System is working very well at facilitating quick responses to frequently requested questions and materials from the Office of Weights and Measures. The Fax-On-Demand phone number is 1-800-925-2453.

Thomas Neal presented a report of PMA Complimentary Association with NCSL to potentially provide training classes to support NCSL member training requirements.

An Action Item was given to Mr. Bill Quigley, that the Best Paper of Monterey, CA, 1996 be published in the October 1996 issue of the "NCSL Newsletter".

Suggestion for workshops for future meetings.

How do we manage and control international growth?

How do we recognize new attendees at meetings/conferences?
Incoming NCSL President Tony Anderson formally accepts the Board of Director's gavel from Past President Bill Doyle, who is probably breathing a sigh of relief right about now.

It seems obvious that Dean Brungart is up to his old pursuits, and completely healthy again, ready for the greens of this golfer's paradise.

NIST Representative to the Board, Dr. Peter Heydemann, presents a brief summary of his MSC keynote talk to the Board. The MSC talk is on page 12.

For what appears to be a pretty fancy dinner service, the food seems a little sparse. But Tony Anderson has pretty good chopsticks technique.

Charlie Motzko and Gary Shuler inspect the impressive Patton tank, named for the historic general who planned his WWII tank tactics here in the Palm Springs desert.

Spouses take some tours during the day-time meetings of the Board. Looks like the weather cooperated. The desert is lovely this time of year.
THE 1996 NCSL WORKSHOP AND SYMPOSIUM
August 25-29, 1996
Monterey Convention Center
Monterey, California
PREPARING METROLOGY FOR THE NEXT MILLENNIUM

LEARNING OPPORTUNITIES

Networking
NCSL provides many opportunities to meet other conference attendees from all over North America and other parts of the world — people who have interests, problems, perspectives and situations similar to yours.
- Reception - Sunday Evening
- Conference Banquet - Tuesday Evening
- International Mixer - Wednesday Evening
- Exhibits - Sunday thru Wednesday
- Luncheons and Breaks - Monday thru Wednesday

Committees
Join with the people who are doing the inside work in committees such as:
- ANSI/NCSL Standards Writing Committee
- Utilities Instrumentation & Calibration
- Medical Instrumentation & Calibration
- Laboratory Facilities & Evaluation
- Calibration Intervals, System & Procedures
- Automatic Test & Calibration
- Intrinsic & Derived Standards
- National Measurement Requirements

Exhibits
Meet face to face with key company executives and technical experts from more than 80 leading manufactures supplying products and services to the measurement community.
- New Equipment Demonstrations
- Applications Information
- Problem Solving and Networking

TOPICS
Topics will be presented in paper sessions and workshops in separate program tracks on Monday, Tuesday and Wednesday:

Theoretical
- New Standards
- Improved Standards
- Intrinsic and Derived Standards
- Advances in Measurement Disciplines
- Standards & Calibrations at National Laboratories

Applied
- Laboratory Automation
- Calibration Processes
- New Trends in Instrumentation
- Metrology for Petrochemicals, Utilities, Healthcare, Pharmaceuticals, Chemistry, Transportation, & Specialized Disciplines

Management/Quality
- ISO Documents (9000, Guide 25, etc.)
- Metrology Management Information Systems
- Strategic Planning
- Equipment Management
- Quality Standards
- Laboratory Accreditation
- Metrology Education and Training
- Self-Managed Workforce
- National Measurement Systems Around the World

For information contact the NCSL Business office
(303) 440-3339  FAX: (303) 440-3384

Serving the World of Measurement
METROLOGY CALENDAR

NCSL MEETINGS

June 14, 1996
NCSL Utilities Meeting
NIST, Gaithersburg, MD
CONTACT: John Ragsdale (423) 697-4273
     Don Ross (410) 260-4325

August 25-29, 1996
NCSL Workshop & Symposium
Monterey Convention Center, Monterey, CA
CONTACT: NCSL Business Office, (303) 440-3339

INDUSTRY/GOVERNMENT MEETINGS

May 9, 1996
Technical Committee for Accredited Electrical Calibration
CONTACT: Kurt Jensen (011) 45-4599-1275
     FAX: (011) 45-4281-5810

May 12-17, 1996
Institute of Environmental Sciences
42nd Annual Technical Meeting & Exposition
Radisson Twin Towers Hotel, Orlando, FL
CONTACT: Inst. of Environ. Sciences, (708) 255-1561

September 9-10, 1996
For Information Call (813) 960-2105
     FAX: (813) 264-2816

October 10, 1996
Eurolab for "Quality Control and Accreditation"
CONTACT: Kurt Jensen (011) 45-4599-1275
     FAX: (011) 45-4281-5810

October 28-31, 1996
Institute of Environmental Sciences
19th Space Simulation Conference
Radisson Plaza Lord Baltimore Hotel, Baltimore, MD
CONTACT: Inst. of Environ. Sciences, (708) 255-1561

REGIONAL MEETINGS

REGION 1

May 9, 1996
Starrett Corp., Athol, MA
CONTACT: Steve Griffin (617) 762-9921
     FAX: (617) 255-8841

REGION 2

Upstate New York Section, April 9, 1996
Rochester Airport Holiday Inn, Rochester, NY
CONTACT: Joe Maclag (716) 687-4689
     FAX: (716) 687-4648

Upstate New York Section, October 15, 1996
CONTACT: Joe Maclag (716) 687-4689
     FAX: (716) 687-4648

REGION 4

Atlanta Section, April 24, 1996
CONTACT: Karen Renner (770) 246-6354
     FAX: (770) 246-6432

Tennessee Section, May 2, 1996
Pollard Auditorium, Oak Ridge, TN
CONTACT: Ed Pritchard (423) 574-4261
     FAX: (423) 574-5037

Central Florida Section, April 25, 1996
Lockheed Martin Corp., Orlando, FL
CONTACT: Bob Hanson (407) 677-7188

REGION 5

Ohio/Kentucky Section, April 8, 1996
CONTACT: Alex Heyward (614) 522-7628
     FAX: (614) 522-7631

Central Indiana Section, April 12, 1996
Cummings Engine Co., Columbus, IN
CONTACT: James C. Guy (317) 925-2792
     E-mail: wiseguy@trader.com

REGION 6

Denver/Boulder Section, April 3, 1996
Lockheed Martin Metrology Lab, Littleton, CO
CONTACT: Greg Burnett (303) 649-5460

Central Texas Section, April 3, 1996
Hewlett Packard Co., Richardson, TX
CONTACT: Clyde Orrison (214) 995-5031
     FAX: (214) 995-4802

South Texas Section, June 19, 1996
COMPAQ Computer Corp., Houston, TX
CONTACT: Jim Patterson (210) 522-2702
     FAX: (210) 522-3166

REGION 7

LA/Orange County Section, April 18, 1996
CONTACT: Mike Magin (714) 895-0151
     FAX: (714) 895-0686

Phoenix/Tucson Section, May 16, 1996
CONTACT: Wayne Benda (520) 794-4483
     FAX: (520) 794-5558

LA/Valley Section, June 5, 1996
CONTACT: Brian Conroy (818) 886-2211 x2523
     FAX: (818) 717-8681

LA/Orange County Section, October 24, 1996
CONTACT: Mike Magin (714) 895-0151
     FAX: (714) 895-0586

REGION 10

Netherlands Area, May 21, 1996
NMI Office, Schoenemakerstr. 97, Delft, the Netherlands
CONTACT: Dr. T.M. Plantenga (011) 31-15-59-15-00
     FAX: (011) 31-15-61-29-71

REGION 11

Kansas City Section, May 15, 1996
Hewlett Packard, Kansas City, MO
CONTACT: Leon Barnes (816) 997-5480
     FAX: (816) 997-3856

REGION 12

Canadian Region, May 16, 1996
National Research Council, Ottawa, ON
CONTACT: Dave Morgan (613) 952-3528
     FAX: (613) 952-1754

Western Canada Area, Spring, 1996
Vancouver, BC
CONTACT: Satoshi Nishio (604) 431-8882
     FAX: (604) 431-8714

REGION AND SECTION COORDINATORS

Please fax your Region and Section meeting announcements to Wilbur Anson at the NCSL Business Office, (303) 440-3334, or E-mail at ncsl-staff@ncsl-hq.org, by May 29, 1996, to have them included in the July issue of the Newsletter.
NEWSLETTER PREFERENCE SURVEY

Are you the NCSL Member Delegate yes(16) no(4)
Or do you read a pass-along copy yes(6) no(7)

What is your principal function?
Metrology lab manager (8)
Metrology Engineer (3)
Quality organization (3)
Metrology vendor/sales ( )
Government/academia ( )
Metrology Technician (3)
Other________________ (2) retired

How many issues do you receive per year?
1(2) 2(3) 3( ) 4(15)

Please estimate how much of an average issue you read?
10%(1) 25%(2) 50%(4) 75%(7) 100%(6)

Do you archive past copies of the newsletter?
yes(18) no(2)

Please rank these regular newsletter sections with this code:
1. Vital, keep
2. Important, keep
3. Useful, but don’t-care for me
4. Not useful for me, you could drop this section

Remember, the lower the number, the more important Rank
Highlights of the Board Meeting (2.0)
Training Information (2.2)
Metrology Calendar (1.75)
Committee News (1.9)
NCSL Newsnotes (1.8)
NIST News (1.8)
Liaison News (2.4)
Reports from the Regions (2.05)
Welcome to New Members (2.4)
Internet Page (1.8)
Touring our Member Labs (2.0)
Member Company Profiles (2.2)
Someone You Should Know (bios) (2.25)
Page-length show/conference announcements (1.9)
Roster of Board, Committee, Region (1.95)
Region Maps (2.2)
E-mail address listings (1.85)

Other typical candidates for space
Annual Conference picture report (2.9)
NIST Historical Series (2.4)
ISO and Z540 News (1.4)
Surveys and reports of interest (1.5)
Appropriate magazine reprints (1.95)

Please list other subjects you would like covered regularly.

Verbatim
1) Status of Round Robins
2) Try to include a tech article regularly. Tech article ie bar coding in Apr 87. Rolf Schumacher on uncertainties in Apr 93. I know they are difficult to get, perhaps you would print the occasional paper from one of our Canadian meetings.
3) ISO Registration
4) Review of important Journal articles
5) Helpful Calibration Hints
6) This issue (region reports) touched on two important issues: 1) Dollars vs 41 tur, 2) Dollars vs subcontractor compliance. We need more industry viewpoints. Keep us updated.

Other matters:
I like the attendee lists printed for regional meetings yes(11) no(4)

The type size and font (schoolbook) is: about right(16) too small(1) too large( )
I would like a directory of member e-mail addresses. yes(12) no(4)

Any other comments?
Verbatim
1) Would like to see ByLaws & Guidelines published, a little bit every issue. Perhaps repeat every 5 years.
2) The conclusion after training class finished for calibration, look like sheets/manual for sale for the member that are non-US
3) Should we consider some items for express handling (more timely)?
4) Thanks for the excellent editorial job!
Ed Note: Aw shucks! On a survey, do I have to report every comment?
5) Solicit articles on the path metrology is currently following; thought of authorities on the future of metrology.
6) I am very pleased with the newsletter. Glad to see in the Jan 96 issue a tour of member lab and the India member org profile.
7) Add email addresses to present directory
8) Having benchmarked our facility with a number of other companies, it seems Metrology, in management’s eyes, ranks somewhat below the cleaning of restrooms in the overall scheme of things.
9) I like the “Looking for Solutions” section that was added. I think it will be very useful.
10) “Looking for Solutions” section is a great addition! This section will surely expand.
11) Excellent publication
12) “Milestone years; ie 25, 30, 35, 50 etc are good opportunities for a “special issue.”
WORKSHOP ON MOISTURE IN MICROELECTRONICS

Electronic engineers, materials scientists, designers and others engaged in the development and manufacture of microelectronic products are invited to the 6th International Workshop on Moisture in Microelectronics, Oct. 15-17, 1996. The workshop will be held at the Commerce Department's National Institute of Standards and Technology, Gaithersburg, Md. It is being co-sponsored by NIST and the U.S. Air Force Rome Laboratory, Rome, N.Y.

The workshop will provide leaders from industry, universities and government with a forum for the exchange of information and ideas on problems and solutions to moisture measurement and control in microelectronics packaging and interconnection. Advancements in the current state of moisture measurement, modeling, and their impact on the performance and reliability of materials, devices and assemblies will be documented at the workshop.

According to workshop organizers, the intrusion of moisture into microelectronic products is a major problem in the manufacture, performance and reliability of electronic devices. The goal of the workshop is to help U.S. industry respond to the challenges and concerns associated with moisture in the manufacture and use of semiconductor packages and electronic interconnects.

For information contact Michael A. Schen, B320 Polymer Bldg., NIST, Gaithersburg, Md. 20899-0001, (301) 975-6741, fax (301) 869-3239, e-mail: michael.schen@nist.gov, or contact Benjamin A. Moore, Rome Laboratory, 525 Brooks Road, Rome, N.Y. 13441-4505, (315) 330-3450, fax: (315) 330-2247 or 2153, e-mail: moore@rl.af.mil.

MEASUREMENT UNCERTAINTY—MEASUREMENT ASSURANCE

COAST QUALITY METROLOGY SYSTEMS

Please refer to the Training Directory for information on this course in measurement process control.

Future dates:

August 19-23, 1996, Monterey, CA, the week before the NCSL Annual Conference there.

January 27-31, 1996, Anaheim, CA, the week before the MSC in Pasadena.

New Fee: $975 single participant.

Coast Quality Metrology Systems

Phone: 714-492-6321

NEW PROCEDURE FOR SUBMITTING NEWSLETTER TRAINING INFORMATION

The "Training Information" section of the NCSL Newsletter was originally created as a place to notify the membership of training material that had been discovered after the publication of the Training Information Directory. This section is open to all members as a means of announcing or recommending metrology or metrology business related training material.

To have your training information printed in the NCSL Newsletter you should submit your input to one of the Education and Training committee chairman, preferably Bill Sorrells, Training Resources Committee or Dave Lorenzen, Training Information Directory Committee. Mailing or e-mail addresses are found in the newsletter.

Information submitted for the newsletter should be in the following format.

Name, address, phone number of the Company or Organization sponsoring the training:
Course Title:
Dates:
Locations:
Course descriptions, who should attend, testimonials and other marketing or commercial information will not be printed in the newsletter but can be obtained from the trainer.

Bill Sorrells
Training Resources Committee

NEW TRAINING RESOURCES

MIT Video Series on Measurement: A series of 8 videotapes on general measurement theory and specific measurement techniques. These tapes were developed in collaboration between Massachusetts Institute of Technology and Omega Engineering.

Price $280 per tape or $2100 for the series. Available from:
Omega Engineering
Stamford, CT
Phone (203) 359-1660.

The Training Resources Committee has not reviewed these tapes.

A reminder:


THE NATIONAL COUNCIL ON SPECS AND LABORATORY STANDARDS
Hewlett-Packard's Test & Measurement Education Catalog is available. Call 1-800-472-5277.

Technical Training Materials, books/software/audiovisual, Catalog is available from Cole Palmer. Phone: 800-323-4340.

Two useful reference books.


NATIONAL SCIENCE FOUNDATION AWARDS GRANT FOR METROLOGY EDUCATION

Tom Kimbrell,
Community College of Aurora

Approximately one year ago the Metrology Program at the Higher Education and Advanced Technology Center at Lowry was awarded a National Science Foundation Grant to develop a national model for metrology education and an articulation model for universities and colleges.

In January 1996 a group of interested individuals attended a DACUM (developing a curriculum) conducted by Scott Krase from the “Center on Education and Training for Employment at Ohio State University.” The purpose was to validate a two (2) year degree program and to establish essential tasks, knowledge, and traits for a B.S. degree in measurements. The results will be presented to the NCSL Board in Colorado Springs this coming May.

A national metrology advisory council has been established to act as advisors on the NSF grant with Don Dalton as the chair of the advisory council. The individuals attending the DACUM were as follows:

Don Dalton  Fluke Corp.
Bill Sorrells  Hewlett Packard Co.
John Simek  Texas State Technical College
Jon Botsford  Pueblo Community College
Dale Hamlin  Kodak
Gloria Necly  U.S. Navy
Lyle Bagley  U.S. Navy
Peter Stein  Stein Engineering Services
Ed Wesson  Harley Davidson Company
Steve Hinterlong  AT&T Bell Labs
Dave Braudaway  Sandia National Labs
Gerome Reeve  NIST
Bob Rantschler  Colorado State University, Denver

EDUCATION COMMITTEE MEETINGS AT THE NCSL CONFERENCE

You are Invited.
Tom Kimbrell,
Community College of Aurora

The Personnel Training Requirements Committee will have two (2) committee workshop meetings during the Monterey conference. These meetings will be utilized to continue the defining of personnel requirements for metrology/measurement profession-

als and will be conducted as a facilitator/panel group to validate and expand on the personnel requirements committee and the results of a National Science Foundation grant. Anyone interested should participate.

The Education System Liaison Committee will have a committee meeting at the Monterey conference. All individuals involved with metrology/measurement education/training are invited to attend. Dates, times, and places will be posted.

All existing committee members and any other interested parties should attend. Date/times/and place will be posted.

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NCSL EDUCATION AWARDS GIVEN TO FOUR SCHOOLS

It has been the policy of the NCSL to make funds available to help individual students at a select group of post secondary schools teaching measurement science curriculum.

The intent of the NCSL education awards program is to further measurement science (metrology) education by helping individual students based on the schools award criteria.

The NCSL is pleased to announce that the 1996 Education Awards will go to Butler County Community College, Community College of Aurora, Hutchinson Technical College, and Amarillo Technical Center.

We appreciate their support of precision measurement education in general and NCSL in particular. Their applications were reviewed by the NCSL Education Vice President and Education committee chairs (Don Dalton, Tom Kimbrell, Dave Lorenzen and Bill Sorrells) and approved by the NCSL Board of Directors. This award is given on a competitive basis and is in recognition of the schools efforts to provide quality graduates to industry for both the present and the future.

Congratulations to these schools for their accomplishments.

Don Dalton

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METROLOGY COURSES OFFERED AT LOWRY

The Higher Education and Technology Center at Lowry and the Community College of Aurora are now offering Metrology and Advanced Precision Measurement classes for credit nationally toward an AAS in Metrology. Interested parties should contact Tom Kimbrell at 303-340-7122 or Sandra Smith at 303-340-7087.

Correspondence should be addresses to:

Tom Kimbrell
Director of Metrology
Higher Education and Technology Center at Lowry
9125 E. 10th Place, Bldg. 859
Aurora, CO 80010
A CHALLENGE FOR THE NEXT 25 YEARS: STANDARDS IN TRADE

Peter M. Heydemann  
National Institute of Standards and Technology  
Gaithersburg, MD  
Measurement Science Conference  
Keynote Address  
January, 1996

Abstract

International trade, and in particular the many impediments to free exchange of goods and services, poses a new challenge for metrologists and standards experts. Of course, in the past 25 years, standards have been used to control international trade, but now the increasing competition in rapidly expanding markets causes many countries to set up barriers to trade based on measurement and normative standards and on conformity assessment. U.S. export trade is certainly affected by these barriers to trade. Metrologists and standards experts are now needed to assist both industry and governments to avoid or overcome these barriers.

The proposed integration of all American nations into the “Market of the Americas” prompts us to look at what steps we need to take to develop this market such that everybody has free access to it. The next 25 years will see dramatic changes in international trade patterns. New trade blocs will emerge; economies that now seem strong will falter. Metrology and standards will play an increasing role. We all need extensive training and education, and must study new approaches to provide out industry with the best possible support.

A New Challenge for Metrology: International Trade

For many years we, at IST, have concerned ourselves with the provision of the best possible measurements and related services to U.S. industry, academia, and the public. Our clientele was steady. We understood their requirements. The primary applications of uniform and accurate measurements were in research, development, and manufacture. There were also applications in services to the public in health delivery, environment protection, and, of course, defense. Now, we experience increasing demands from industry and Federal agencies for a new and broader range of services: a new clientele applies our services to an unfamiliar purpose: international trade support. Now, we realize that measurements and normative standards play a very important role in accessing and controlling international markets.

In 1993 U.S. industry exported about $660 billion dollars worth of goods and services. These goods and services were sold into an increasingly competitive global market with many barriers to trade. Trade experts have indicated that additional exports worth $20 to $40 billion could be produced right, if we could overcome all technical barriers to trade (TBT), but more exports may be lost as technical barriers to trade proliferate.

Technical Barriers to Trade (TBT)

Most TBTs result from disparities between standards and conformity assessment practices in the United States and those of our trading partners:

- Foreign national, regional or international standards may not reflect U.S. standards and technical practices. This is due, in some cases, to lack of U.S. influence in the development of international standards. European practice prevails in many technical areas thanks to their extensive participation in the international, voluntary standards development process. In many cases, the United States has had limited opportunity to influence development of national standards of importing countries or regions.

- Differences in conformity testing and certification requirements in other countries frequently pose obstacles to U.S. exports. If Mutual Recognition Agreements (MRA) for conformity testing are not in place and, consequently, test data generated in the United States are not accepted in a foreign country, U.S. exporters must duplicate costly and time-consuming approval and certification procedures in the foreign country to meet regulatory requirements for product acceptance. Agreements on the mutual recognition of conformity testing are often difficult to obtain and even more difficult to enforce.

- Foreign standards and conformity assessment rules are often complex and detailed, and many exporters are unable to obtain sufficient, timely information on them. This problem compounds the difficulties created by disparities among national or regional standards and conformity assessment rules.

- The proof of the sellers’ quality management system required by buyers is becoming more extensive and widespread. The family of ISO 9000 guides is virtually used as a standard and conformity needs to be demonstrated.

- In the European Union (EU), having the “EC” mark is a necessary condition for merchandise to enter the market, but in many cases a national mark is also required.

The Spirit of Bretton Woods is Lost

Many, perhaps most non-tariff, technical barriers to trade have legitimate purposes, such as the protection of human health and safety, protection of the environment, national security, etc. Some barriers are caused, perhaps inadvertently, by outdated normative standards, rules or regulations, or are based on misperceptions. However, some trade barriers have no legitimate purpose, but exist only for the protection of markets.

At Bretton Woods in 1944, the intellectual basis for worldwide economic cooperation was laid, and the concepts of the International Monetary Fund and the World Bank were developed, but the spirit of that conference is gone. Rampant nationalism was obvious during the many years of negotiation of the World Trade Agreement, and is even expressed in what was and what was not covered by the final agreement. Industry not only faces a more global market, but it faces one in which governments distort the "playing fields." In the longer run, no nation is going to benefit. We all need to cooperate for our mutual advantage, to level the playing field and to overcome the barriers to trade.

It is no longer sufficient that a product has a large market, is of good quality, and reasonable prices. One or more technical barriers to trade must almost always be overcome or dealt with in a constructive fashion to gain access to the market before anything can be traded. Not only is this situation serious, it is also getting worse. European standards laboratories are making great efforts to assist standards laboratories in developing markets. Millions of dollars for equipment and hundreds of man-months of training are
spent on these laboratories in a seemingly charitable effort to support fellow metrologists. Actually, this support may be less charitable and more directed at gaining control of markets. In the process, practices are introduced that we consider to be technical barriers to trade. To the extent that this effort succeeds, the "playing fields" are distorted. This is quite obvious in Eastern Europe, Russia, Belarus, Ukraine, Turkey, and South and Central America.

Not only traders from the United States, but everybody trading in the World market, must now satisfy these two necessary conditions to enter the competition:

1) Assurance of conformity of products or services to the standards of the receiving market. Conformity assurance requires: a recognized metrology system built around a capable national measurement laboratory with documented calibration chains to the points of use; accredited testing laboratories; recognized acrreditors; and registered quality management systems. To market competitive products and services, customers must often have NIST-traceable calibrations of documented uncertainty and the assurance of a NIST quality management system in place.

2) Proof of quality of products, services and operations (ISO 9000). Customers need this for access to markets, to reduce risk in the marketplace, to satisfy the market demand, and to comply with requirements of regulatory agencies.

Industries can expect that NIST will assist them to avoid or overcome technical barriers to trade, negotiate removal of technical barriers to trade, promote use of U.S. technology and practice in international standards, and institute a registered quality management system in its operations. We want an open international market and will, therefore, move decisively.

NIST Standards in Trade Program

Here are some of the general and specific things that NIST is now doing to help improve U.S. access to markets:

* Promote the incorporation of U.S. standards and practices into international standards through active participation in international standards developing organizations, such as ISO, IEC and OIML.

* Reduce differences between U.S. standards for specific products and those of our major trading partners, especially in primary and developing export areas, and negotiate to maximize the adoption by developing countries of U.S. standards and practices.

* Provide the technical underpinning and develop the contacts necessary for recognition of U.S.-based conformity assessment practices by foreign regulatory authorities, and support U.S. negotiators in developing and implementing mutual recognition agreements. This is perhaps the most difficult task. We export goods to the European Union worth about $122 billion. Some 70% of these goods require some kind of conformity certification. In the U.S., most of these assurances are provided by the manufacturer as "self certification."

The EU, and many other trading partners, do not trust private industry, so 40% of our exports to the European Union require third-party certification. About 20% of our exports must obtain this third-party certification from laboratories in the European Union. This is time consuming, expensive, and clearly a technical barrier to trade. The situation will not improve soon, since the European Union refuses to approve most mutual recognition agreements for conformity testing.

* Establish permanent representation by resident, professional NIST standards experts at the USEU Mission in Brussels and in other important markets. The NIST standards experts will: 1) work with national and international standards committees to facilitate recognition of U.S. practices and test methods in new standards; 2) review existing foreign or international standards in key U.S. export sectors and, based on private sector input, advocate modifications to remove or reduce technical barriers to trade, 3) support negotiations on mutual recognition agreements for conformity testing; 4) facilitate U.S. input to the development of standards, test methods, and certification procedures supporting regulatory requirements; and, 5) provide technical advice and support to commercial and economic staffs in U.S. embassies for the identification and resolution of trade issues involving technical barriers. We now have representatives in the European Union, Saudi Arabia, India, Argentina, and Mexico. We will add representatives in several other countries over the next few months.

* Raise awareness of industry and the Federal Government of the importance of standards, testing, and certification practices especially in international arenas.

* Participate in the funding and development of an automated standards data network incorporating all available sources of information to support the information needs of industry and government.

We plan to conduct our trade-related standards and conformity assessment programs in close cooperation with industry and the International Trade Administration including the Foreign Commercial Service. We certainly welcome input, advice, and assistance for our program.

Market of the Americas

In November, 1994, the Heads of Government of almost all of the countries of the Americas met in Miami and decided to take definitive steps towards an integration of the "Market of the Americas." When, a few years ago, the North American Free Trade Agreement (NAFTA) was signed, the GDP of our market increased by almost $1 trillion. Forming the Market of the Americas will expand our market by another $1 trillion. We need to realize that this is not just our, the United States's, market, but that of every large and small country in North, Central and South America. Are we all ready to overcome the technical and other barriers to trade in this, our new market? The answer is very definitely "no." All countries in this market must now establish the organizations and services needed to assure all of them free access to the Market of the Americas.

As a first step towards integration of the Market of the Americas, representatives of 25 of the 36 member states of the Organization of the American States (OAS) met in Rio de Janeiro, Brazil, in January 1995 to plan and coordinate the revival of the InterAmerican System of Metrology (SIM). During this meeting five regions were established (NORAMET, CAMET, CARIMEET, ANDIMET, and SURAMET), and the general structure of SIM was adopted. This structure consists of a Council President and Representatives from each region. These form the SIM Council. The Presidency is currently held by Mexico. The Executive Secretariat will be maintained by the OAS. Each region selected representatives for the technical and
The Market of the Americas

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Capabilities Needed in the Market of the Americas

To Meet Market Entry Requirements, Countries Need:

- National or regional laboratories
- Measurement standards traceable to other major laboratories
- Calibration services for physical measurements
- Calibration services for chemical measurements
- Standard Reference Materials
- Accredited testing and calibration laboratories
- Commercial metrology laboratories with traceable standards
- Weights and Measures organizations
- Voluntary standards development organizations
- Regulatory agencies
- Registered accreditors
- A government agency capable and empowered to negotiate with other countries about mutual recognition agreements for accredited testing laboratories.
THE INTERNET PAGE

NCSL BUSINESS OFFICE IS ON LINE

You will note in the masthead on page 2 that Wilbur now has the NCSL Business Office on the Internet. The address is: ncsl-staff@ncsl-hq.org

At this time, planning is proceeding on establishing a home page for the NCSL organization, but it takes some time to do it right, and we will have to let you know when it is accomplished. It is in the plan, however, and most of us feel pretty good about making instant information available.

A METROLOGY FORUM?

Peter Mauro of GEC-Marconi and Lee Walters of Motorola are interested in starting a Metrology Forum on the Internet. And in the process of receiving messages back from my e-mail address survey in January, I find that others are interested in keeping current on any of those plans.

Bill Quigley is informed and is following the interest. In addition, you will see on the following lists of contributed WWW sites, that there is a wealth of metrology and quality information potentially available to those who choose to get on line. Remember that a service like Compuserve or AOL only costs about $9.00 per month. You do have to buy a modem for your computer, but these are well less than $100 these days.

You'll also have to ask your family to be patient for all those times you will want to hog the phone line to log on and pick up your messages or go browsing on the Internet.

INTERNET COMMENTS

Don Miller of Coors Ceramics mentioned one experience which Internet solved for him. He had been looking and asking for a copy of the DOD, "Cancellation of MIL-STD-45662A" memo with no luck at the time he needed it. He then ran across the DOD homepage, and found all the information he needed.

MORE CONTRIBUTED WWW SITE SUGGESTIONS

RICHARD RANDALL (rcr9000@aol.com) offers these suggestions:

- Danish Institute of Fundamental Metrology—DFM (Danish equivalent of NIST) http://www.dfm.dtu.dk/
- Irish National Metrology Laboratory (NML) http://www.netc.ie/techserv/metrolog.html
- Korea Research Institute of Standards and Science (KRISS) http://www.kriissol.kriss.re.kr/
- The National Research Council—NRC (Canadian equivalent of NIST) http://www.nrc.ca/
- The National Physical Laboratory—NPL (UK equivalent of NIST) http://www.ess.npl.co.uk
- Physikalisch-Technische Bundesanstalt—PTB (German equivalent of NIST) http://www.ptb.de/
- John Fluke Company (site under construction) http://www.fluke.com/
- And BILL QUIGLEY (wfquigley@ccgate.hac.com) offers these site suggestions:
  - Acquisition Web—Undersc'ey of Defense for Acquisition Reform http://www.acq.osd.mil/
  - DefenseLINK (to DOD) http://www.dtic.dla.mil/defenselink/
  - Deming Library http://deming.ceng.clemson.edu/pub/dem/files/index.html
  - Dilbert Home Page "I think he works in the next cubicle" http://www.itedmedia.com/comics/dilbert/
  - Electronic Engineering Times Links (has MANY links to other sites) http://techweb.cmp.com/et/docs/f95/surf5.html
  - Federal Web Register http://www.law.vill.edu/fed-agency/fedwebloc.html#dod
  - FedWorld http://www.fedworld.gov/
  - ISO Online http://www.iso.ch/welcome.html
  - Microsoft Home Page http://www.microsoft.com/default.html
U.S. ORGANIZATIONS:
Accredited Standards Committee X3
http://www.x3.org

* ARI - Air Conditioning and Refrigeration Institute
http://www.ari.org

* ACS - American Chemical Society
gopher://acsinfo.acs.org

* ANSI - American National Standards Institute
http://wwwansi.org

* ANSI National Standards System Network (NSSN)
http://nssn.org
http://dsys.sicsarl.nist.gov/nssn
http://hsdwww.res.utc.com

* API - American Petroleum Institute
http://www.api.org

* ASQC - American Society for Quality Control
http://www.asqc.org

* ASTM - American Society for Testing and Materials
http://www.astm.org e-mail: customer service:
service@astm.org info center: infoctr@local.astm.org

* ASAE - American Society of Agricultural Engineers
http://asae.org

* ASCE - American Society of Civil Engineers
http://asce.org e-mail: marketing@ry.asce.org (questions re:
publications)

* ASHRAE - American Society of Heating, Refrigeration and
Airconditioning Engineers
http://www.ashrae.org

* ASME - American Society of Mechanical Engineers
http://www.asme.org http://www.webplus.net/asme

* ATA - American Trucking Association Management Systems
Council
http://access.digex.com/~deadhack/msc.html

* AWWA - American Waterworks Association
http://www.awwa.org

* AWS - American Welding Society
http://www.amwels.org

* ACM - Association For Computing Machinery ACM
http://www.acm.org http://info.acm.org

* AIIA - Association for Information and Image Management
http://aaim.org

* AIAG - Automotive Industry Action Group
http://www.aiag.org

* BIHSA - Bicycle Helmet Safety Institute
http://www.bhsi.org
• BIC - Book Industry Committee  
  http://www.bic.org.uk/~bic

• DISA - Data Interchange Standards Association  
  http://www.disa.org

• EDI - Electronic Data Interchange Standards  
  http://www.premenos.com/standards

• EIA - Electronic Industries Association  
  http://www.eia.org

• FCA - Fibre Channel Association  
  http://www.amdahl.com/ext/CARP/FCA/FCA.html

• HIBCC - Health Industry Business and Communications Council  
  http://www.hibcc.org

• IEEE - Institute for Electrical and Electronics Engineers (IEEE)  
  http://www.ieee.org  
  gopher://info.ieee.org  
  gopher://stds.bhs.ieee.org  
  ftp://stds.bhs.ieee.org

• IEEE Computer Society  
  http://www.computer.org

• IPC - Institute for Interconnection and Packaging Electronic Circuits  
  http://www.ipc.org

• NFPA - National Fire Protection Association  
  http://www.wpi.edu/Academics/depts/fire/nfpa/standards_info.m  
  http://www.wpi.edu/~frpe/nfpa.html

• NISO - National Information Standards Organization  
  http://www.niso.org  
  Listserv: NISO-L Listproc@cni.org

• NSF - National Science Foundation  
  http://www.nsf.com

• RSNA - Radiological Society of North America  
  http://www.rsna.org

• SMPTE - Society of Motion Picture and Television Engineers  
  http://www.smpte.org

• T1 Committee  
  http://www.t1.org

• UL - Underwriters Laboratories  
  http://www.ul.com

• VESA - Video Electronics Standards Association  
  http://rigel.nist.gov/vesa/index.html

INTERNATIONAL ORGANIZATIONS:

• DISA - Data Interchange Standards Association, Inc.

http://www.disa.org

• ECMA - European Computer Manufacturers Association  
  http://www.ecma.ch  
  email: helpdesk@ecma.ch

• ETSI - European Telecommunications Standards Institute  
  http://etsi.fr

• EWOS - European Workshop Open Systems  
  http://www.ewos.be

• IEC - International Electrotechnical Commission  
  telnet://iec.iec.ch  
  http://www.iec.ch  
  ftp://ftp.iec.ch/pub

• CIE - International Commission on Illumination  
  http://www.hike.te.chiba-u.ac.jp/ixeda/CIE/home.html

• IFIP - International Federation for Information Processing  
  gopher://ietf.curi.reston.va.us/11/ifip

• ISO - International Organization for Standardization  
  http://www.iso.ch (In French or English)  
  http://138.81.2.245  
  email: "lastname"@isocs.iso.ch  
  sales@isocs.iso.ch  
  ISO 9000 Forum at Chiba University, Japan  
  http://www.hike.te.chiba-u.ac.jp/ixeda/documentation/iso9000/

• ISA - International Society for Measurement and Control  
  http://www.nando.net/iss

• ITU - International Telecommunications Union  
  http://www.itu.ch  
  gopher://info.itu.ch  
  telnet: ties.itu.ch or info.itu.ch login: gopher  
  email: helpdesk@itu.ch  
  Document store: (TELEDOC) telnet teledoc@itu.arcom.ch

• VITA - VMEbus International Trade Association  
  http://www.vita.com

SINGLE NATIONS:

• Standards Australia  

• SCC - Standards Council of Canada  
  http://www.scc.ca

• SFS - Finnish Standards Association  
  http://www.sfs.fi

• UNI - Italian Standards Organization  
  http://www.unicei.it

• JIS - Japanese Industrial Standards  
  http://www.hike.te.chiba-u.ac.jp/jkeda/JIS

• SIRIM - Standards and Industrial Institute of Malaysia  
  http://www.sirim.my

• NNI - Netherlands Normalisation Institute  
  http://www.nni.nl

• Norwegian NORSOCK standards  
  http://www.elanders.no/norsok.html

• Norwegian Council for Building Standardization
Editor's Message
(continued from page 2)

Les Peer from Canada mentioned in a note that they took a hands-up survey at their Halifax Symposium and found that over half of their attendees used e-mail, although he noted that some people are selective as to whom they give their e-mail address.

I'm going to keep plugging away on the Internet way-of-life, because I'm convinced that good things are available there. In that respect, you will note on the Internet page that several readers have submitted their favorite WWW sites, which seem to offer data at your convenience.

Get Well, Don Drum

Unfortunate news from Pittsburg. Dr. Don Drum, Coordinator of the NCSSL Pittsburgh Section of Region 2, was hit with a stroke on Dec. 21, 1995, after shovelling snow to free his stuck car. As most of you know, Don is Assistant Dean for Natural Science and Technology at Butler County Community College, and is well-recognized for his energetic promotion of metrology training and committee activity.

Don is back at work now, part-time, and dutifully applying his energies to his rehabilitation program. I've known a number of men who suffered strokes in my time, and I know that the comeback program can be long and frustrating. But the rewards are great, and Don will certainly be back to his old self in good time. We wish him all the best, and offer our help for any tasks that he wishes to delegate.

NIST Budget Woes

For any of you following the national budget debates and Congressional machinations, you will know that there is clearly going to be an impact on NIST organizations and operations. If you want to keep up to date, you might be interested in a publication entitled, "Budget Update." I infer that it is aperiodic, but it does give a good picture of "Commerce Dismantlement" and Government Shutdowns, etc.

You could request a copy from:

Michael Newman
NIST Public Affairs Office
301 975 3025

John Minck, Editor
PRESENTING THE BUTLER COUNTY COMMUNITY COLLEGE CLASS OF 1996

Butler County Community College would like to announce its 1996 Metrology graduating class. As in the past, several students have selected to continue their education. However, BCCC anticipates these students entering the job market after commencement in May.

Once again, last year’s class was successful in obtaining employment. We would like to extend our appreciation to you who have contacted BCCC to meet your needs for Metrology personnel. Historically, our students have obtained employment with fine companies such as Babcock & Wilcox, Armco, USX, NASA, Medrad, Mine Safety Appliances, Glaxo Inc., Actco Tool Manufacturing, Penn United Technology, American Glass Research, University of Pittsburgh Applied Research Center, Abbott Laboratories, and the National Institute of Standards and Technology.

We would also like to extend our appreciation to those that have supported our program through donations and grants. The generosity of companies such as Fluke Corp. have made it possible to familiarize our students with the use of modern calibration tools like the 702 Process Control Calibrator, METCAL, and the new 5500A Multi-Product Calibrator. To complement such donations, individual support like that of Phil Painchaud’s, through the “Painchaud Chair of Metrology” grant, are making it possible to invite personnel from industry to share modern Metrology practices.

We invite you to visit our campus to speak to our classes and/or interview potential employees. Further questions concerning the program can be directed to David Schiebel at 412-287-8711, Ext 258. Our Job Placement Counselor, Fred Kinniek, Ext 310, will facilitate the posting of any job openings.

Fred Kinniek

William L. Berasi
711 Kiester Road
Slippery Rock, PA 16057
412-794-5881

I will be graduating from BCCC in May 1996 with an Associate Degree in Metrology. My training included coursework in Quantitative Chemistry, Analytical Chemistry, Spectroscopy, Optical Metrology, Electrical Metrology and Dimensional Metrology.

Having worked 15 years in industrial glass fabrication, the Metrology program here at BCCC has taught me how to further expand and build upon problem-solving skills I have acquired in industry.

I am currently working on my senior project. My project involves a quantitative analysis of a product designed to protect metal-to-metal contact surfaces in the boundary regime. To achieve my project goal I had to design, build and test an apparatus that monitors frictional force through strain gages and a data acquisition tie-in.

I am presently seeking employment opportunities as a Metrologist or engineering technician. Throughout my academic studies I have maintained a 3.28 GPA, and was the recipient of a NCSL scholarship. I confidently offer an employer a high level of problem solving capabilities and professional calibration qualifications.

William Berasi
Bryan Dally
480 Prospect Road
Evans City, PA 16033
412-538-3835
bdally@fyi.net

Two and a half years ago I received several recommendations for the Butler County Community College (BCCC) Metrology Program. This May I will graduate with an A.A.S in Metrology, but more importantly with an understanding of theoretical and applied knowledge of standards and calibration to those standards.

During the first summer after my year in the Metrology Program, I worked as a Lab Technician for a local company. While employed, I was able to use my education to write a Calibration Program for dimensional measuring instruments. After approval of the program, I implemented the procedure to the departments that applied. I was also involved in setting up computers to monitor processes throughout the plant.

Computers are the next step in metrology. I have an ample knowledge of both hardware and software. My sophomore class project utilizes computers to calibrate various electrical measuring devices, in the BCCC Electronics Department. This project was chosen to further my knowledge of I/O components of computers.

While attending BCCC, I have earned membership in Phi Theta Kappa, as well as been on the President’s List. For the past year I have been Secretary/Treasurer of the BCCC Metrology Club. Recently I have joined ISA as a Student Member. I intend to continue my education after spending several years in the metrology field. Therefore I will be better able to choose which field of metrology in which to specialize.
John B. Dixon
234 West Cunningham Street
Butler, PA 16001
412-285-9667

I will be graduating with honors in May, 1996, with an Associate in Applied Science Degree in Metrology from Butler County Community College. Following graduation, I will be seeking a full time position in Electrical, Chemical, Dimensional or Optical fields of Metrology.

Having a perfect attendance record, along with a 3.65 GPA throughout my five-plus semesters at BCCC, demonstrates my reliability and commitment to my chosen career, Precision Measurement. While employed in the construction trade (roofer), I became accustomed to working until the job was completed and was a dependable, competent, intelligent person with a good attitude who will make a positive contribution to the calibration objectives of a future employer.

Scott Pridemore
110 Bovard Lane
Slippery Rock, PA 16057
412-794-8256

For the last two years I have been enrolled in the Metrology program at Butler County Community College. Projected graduation is May 1996. During my studies at BCCC, I have maintained status as a President’s List Phi Theta Kappa member. I have served on the Student Senate, and am presently the Metrology Club President. This last semester, I am performing an internship for American Glass Research, where I am conducting stress and fracture analysis of glass containers. I have a thorough working knowledge of several computer programs and measurement techniques.

I am presently seeking employment in Dimensional, Optical or Electrical Metrology. The Metrology program at BCCC has helped to prepare me for the rapidly changing field of measurement and calibration. I was a recipient of an NCSL scholarship. I am a hard-working, dedicated individual who gives attention to detail. My main interest for employment would be in Western Pennsylvania or Eastern Ohio; however, with reasonable compensation, I would consider relocation.

Gregory Toy
RD#4 Box 283 A
Kittanning, PA 16201
412-297-3145

I will be graduating from Butler County Community College in May 1996 with an A.A.S. Degree in Metrology, maintaining better than a 3.50 GPA throughout my two years of college. My training included coursework in Quality Management, Chemistry I, Qualitative Chemistry, Analytical Chemistry, Spectroscopy, Optics and Physical and Dimensional Metrology.

Having owned and operated a business for six years, I know hard work first hand. I was recipient for a NCSL scholarship in the fall of 1995. The intense program at BCCC has prepared me to perform calibration duties for my employer at an appropriate entry level position. Employment opportunities in dimensional, chemical, and optical would be areas in which I would like to begin my Metrology career.
Handbook for the Interpretation and Application of the ANSI/NCSL Z540-1-1994 is now available!!

This Handbook is an informational guide intended to enhance the user's understanding of the requirements of the Z540-1. The Handbook may be purchased from NCSL at $17 per copy (bound or looseleaf) or $22.50 per copy in CD-ROM.

Still available is the ANSI/NCSL Z540-1-1994

Titled ANSI/NCSL Z540-1-1994 General Requirements for Calibration Laboratories and Measuring and Test Equipment, this standard essentially combines MIL-STD-45662A, the consensus national standard for the U.S., and ISO Guide 25, the primary document recognized by the international community to ensure calibration laboratory competence.

The ANSI/NCSL Z540-1-1994 may be purchased from NCSL at $8 per copy.

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| Past President          | 256.94 |

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| Secretary's Expenses: | 417.36 |

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| Wildtack Award | 1,015.00 | 1400 |
| Expenses - Other | 9,430.51 |

| TOTAL EXPENSES | 716,911.42 | 756,925.00 |
| Total Income - Total expenses = | 11,416.20 | -2,095.00 |
NOTICE

The ANSI/NCSL Z540 Committee is organizing a writing group to adopt the current version of the ISO Guide to the Expression of Uncertainty in Measurement as an ANSI/NCSL Standard. The main contents of the ANSI/NCSL standard will be identical to that of the existing ISO document with the exception of minor spelling and punctuation changes. An additional foreword will also be added to the ANSI/NCSL standard.

Anyone interested in participating in the writing group should contact the following chairperson by May 15, 1996:

John A. Wehrmeyer
Corporate Metrology Center
Eastman Kodak Company
901 Elmwood Road
Rochester, New York 14653-5507

Telephone: (716) 726-4427
FAX: (716) 726-1671
E-Mail: LOCKOVMI.YAHF11@KODAK.KODAK.COM


Jack L. Ferris

Chairman Z540 Accredited Standards Committee

In the year and a half since the initial approval of the ANSI/NCSL Z540-1-1994 standard, several events have occurred that have brought the standard to the attention of the metrology community. The most significant of those events was the cancellation of MIL STD 45662A by the United States Department of Defense in favor of the Z540-1 standard and ISO 10012-1. This event has had and will continue to have far reaching impact on those companies that do business with the United States government.

The Z540 Accredited Standards Committee has been active during the last year and a half in promoting the use of the Z540-1 standard, in defending appeals of the approval of the standard, in making plans for the first revision, and in making preparations for the next standard in the Z540 series.

The committee has been promoting the standard in various agencies of the United States Government. As mentioned earlier, the Department of Defense has adopted the standard as one of two acceptable for use as contractual documents in place of MIL STD 45662A. The standard has also been promoted within the Department of Energy and accepted for use in some areas. The staff of the Nuclear Regulatory Commission (NRC) is considering the publication of a regulatory guide that recognizes the Z540-1 standard as meeting the requirements of 10CFR50, Appendix B. As a side note to the NRC activity, the Institute of Electrical and Electronic Engineers has withdrawn ANSI/IEEE 498. This standard was the de-facto requirement for the control of measuring and test equipment in the nation's one hundred plus nuclear power generating plants.

The committee leadership has successfully defended the Z540-1-1994 standard in two appeals hearings during the last year and a half. The first appeal was filed with the American National Standards Institute (ANSI) in October of 1994. In accordance with ANSI procedures, an appeals panel was formed by the secretariat for the Z540 Accredited Standards Committee. This appeal was heard in late February, 1995 in Los Angeles. The appellant claimed that ANSI procedures were violated in eight separate areas. The appeals panel found that the appellants appeal was without foundation in fact in each of the areas claimed in the appeal.

Subsequently an appeal was filed by the same appellant with the ANSI Board of Standards Review in late July, 1995. This appeal required the preparation of a rather voluminous written response plus a verbal presentation at the appeal hearing in early December, 1995. The ANSI Board of Standards Review found for the committee on all points raised by the appellant, thus validating the process used in development of the Z540-1 standard as meeting the Z540-1 standard as meeting the ANSI requirements.

The Z540 committee is in the process of providing comments on the draft of the ISO Guide 25. Since Z540-1-1994 part I is based on ISO Guide 25, it is very important that the committee's voice be heard in the drafting of the revision of the Guide. It is anticipated that the revised ISO Guide 25 will be published in late 1996 or early 1997. After the revised ISO Guide 25 is published, the Z540 committee will begin the process of revision of the Z540-1-1994 standard.

In the fall of 1995, the Z540 committee voted to expand the committee scope statement filed with ANSI. This expanded scope will enable the committee to develop additional standards for the metrology community. The revised scope is awaiting approval by the ANSI Executive Standards Council. That approval is anticipated to be given early in March. Following that approval, a writing group will be formed to prepare the next standard, Z540-2.

The much anticipated Handbook for the Interpretation and Application of ANSI/NCSL Z540-1-1994 has been printed and is available from the NCSL Headquarters in Boulder CO. (303) 440-3339, fax (303) 440-3384. This handbook contains interpretive guidance and examples for the Z540-1 standard. It also contains an example audit checklist for Z540-1. The NCSL Laboratory Evaluation Committee, under the leadership of Leroy Britain and John Wehrmeyer, is responsible for the development of this excellent handbook.

Much activity has taken place during the last year and a half and much is planned for the near future. If you would like to be a part of this activity as an observer or as a voting member of the Z540 Accredited Standards Committee, please contact me c/o Consumers Power, 135 West Trail Street, Jackson MI 49201. (517) 788-0390, fax (517) 788-1724, Email BKTP66A@prodigy.com.

FOLLOW UP REPORT TO NRC RESPONSE TO NCSL CANADIAN METROLOGY REQUIREMENTS SURVEY OF JULY 1994

INTRODUCTION

The final report by INMS in July 1994 on the Measurement Requirements Survey carried out by the Canadian Section of the National Conference of Standards Laboratories provided an NRC response to each of the specific technical items on which comments or concerns were voiced by the respondent. The purpose of this update is to inform NCSL members and other clients of the progress that has been made on addressing the issues that were raised in the Survey and reported on in the July 1994 report.

UPDATE

The original comment by the particular Survey respondent is given, followed by the NRC response to the item at that time. This is followed by the current status of that particular item, as of the end of November, 1995.

Electrical Measurements

1. For AC shunts, the respondent is currently using NIST facilities to calibrate AC/DC difference at 100kHz to uncertainties of ±10 ppm.

NRC Response: We are currently providing specific services in the area of AC shunt calibration and are developing capabilities, available by mid-1996, which will address this particular requirement.

NRC Update: Calibration of shunts to this degree of certainty is not available on a routine basis. However, for a limited current range, this uncertainty may be achieved upon special request.

2. For AC voltage measurements, presently using NIST facilities to better uncertainties to ±10ppm.

NRC Response: Limited calibration capabilities are currently available down to uncertainties of 10ppm. A full range capabilities is now being developed and will be available by December 1995.

NRC Update: Almost the full range of calibration services is now available. The 1000 v range for frequencies above 30 kHz is not yet available but it is anticipated that it will be available by mid-1996.

3. NRC is unwilling to calibrate Datron 4950 mts or Datron 4920 AC voltage standard.

NRC Response: These multi-function transfer standards are very expensive to calibrate and INMS is not set up to do it at the present time; a calibration service may be provided in the future if there is sufficient client demand.

NRC Update: No change in NRC response.

4. Need calibration services for Fluke 792A.

NRC Response: A limited capability is currently available; the full range of calibration services is being developed and should be available by December 1995.

NRC Update: Almost the full range of calibration services is now available. The 1000 v range for frequencies above 30 kHz is not yet available but it is anticipated that will be available by mid-1996.

5. Requirements for calibration services for RF standard field (low frequency).

NRC Response: This is currently not done at NRC; traceable measurements may be obtained through other sources such as NIST.

NRC Update: No change in NRC response.

6. The client indicated a future requirement for Q and Q-hour energy and power measurement on an axis lagged 60° from normal (analogous to the 90° lagged axis used in reactive power and energy measurements, the units for which are vars and varhouns).

NRC Response: INMS is equipped and capable of providing the required services.

NRC Update: As previously, NRC is capable of providing the required service.

Dimensional/Shape

7. Requirement for the calibration of the following:
   - Master step gauge, 18 in., to within 5μin
   - Ultradex, to within 1/4 arc-sec
   - Master step gauge, up to 40 in., to within 10μin

NRC Response: Not equipped to calibrate step gauges at this time; perhaps in the future, with sufficient demand. With the new Length Standards facility operational, INMS is equipped to calibrate the Ultradex at the required accuracy.

NRC Update: Master Step Gauges; NRC can calibrate step gauges using gauge blocks and the SIP 30M CMM as a comparator. The uncertainty is expressed as U=\sqrt{a^2+b^2+c^2}, where a is the end-effects component, and bL is the component that depends on the measured length L. The ability to located the step-faces has an uncertainty of ±0.1μm on the SIP, and the ability to transfer the length L of the gauge blocks in open air on the CMM in our lab is about b=0.5 ppm (part per million). This gives a combined uncertainty of U=[0.1, 0.5 ppm L]μm, L in metres. On an 18 inch step gauge, U=0.25μm (10μin), and on a 40 inch step gauge, U=0.5μm (20μin). NRC feels that there are few clients in Canada who can work to this level of uncertainty, and questions the requirements expressed in the survey of 5μin on 18 inches and 10μin on 40 inches.

Angle Index Tables: NRC can calibrate index tables (like the Ultradex) to an uncertainty that is commensurate with the quality of the client index table, but not less than 0.1 seconds for routine calibrations. Index tables are usually checked at 30° intervals, but other intervals, but other intervals and levels of uncertainty can be requested by the client.

NRC Update: Master Step Gauges; NRC can calibrate step gauges using gauge blocks and the SIP 30M CMM as a comparator. The uncertainty is expressed as U=\sqrt{a^2+b^2+c^2}, where a is the end-effects component, and bL is the component that depends on the measured length L. The ability to located the step-faces has an uncertainty of ±0.1μm on the SIP, and the ability to transfer the length L of the gauge blocks in open air on the CMM in our lab is about b=0.5 ppm (part per million). This gives a combined uncertainty of U=[0.1, 0.5 ppm L]μm, L in metres. On an 18 inch step gauge, U=0.25μm (10μin), and on a 40 inch step gauge, U=0.5μm (20μin). NRC feels that there are few clients in Canada who can work to this level of uncertainty, and questions the requirements expressed in the survey of 5μin on 18 inches and 10μin on 40 inches.

Angle Index Tables: NRC can calibrate index tables (like the Ultradex) to an uncertainty that is commensurate with the quality of the client index table, but not less than 0.1 seconds for routine calibrations. Index tables are usually checked at 30° intervals, but other intervals, but other intervals and levels of uncertainty can be requested by the client.
provide the required accuracies by January 1995.

NRC Update: Like the step gauges, NRC calibrates diameter using guage blocks and the SIP 30M CMM as a comparator, and the routine uncertainty is given as \( U = 0.1 \mu m, 0.5 \mu m \) \( L \) in meters. On a 2-inch ring, \( U = 0.1 \mu m \) \( 4\mu m \), on a 6-inch ring, \( U = 0.12 \mu m \) \( 5 \mu m \) \( in \), and a 10-inch ring, \( U = 0.16 \mu m \) \( 6 \mu m \). Roundness is measured on the Taylor Hobson TR-73, with an uncertainty of \( U = 25 \) \( mm \) \( 1\mu m \).

Mass and Related Measurements

9. The respondent gets all pressure calibrations over 20 psig \( (140kPa) \) done by facilities traceable to NIST; finds NRC capabilities unsatisfactory.

NRC Response: INMS is equipped and capable of providing pressure calibrations at this level, to an uncertainty of 5 parts in 10V.

NRC Update: No change in the NRC response.

10. Respondent sends his flowmeters with capabilities above 400 cu. ft. per hour to facilities in the USA, traceable to NIST; finds NRC capabilities unsatisfactory.

NRC Response: INMS is currently establishing a capability to provide the required services. Low range, volume displacement calibration services will be available by the end of December 1994; a full range of flow calibration services will be available by January 1996.

NRC Update: Calibrations are carried out in the range 1 to 30,000 sccm.

11. Requirement for the calibration of hydrometers in the range of 500-590 kg/cu. m. density range for liquified gases.

NRC Response: INMS routinely calibrates hydrometers in this range. A limitation may be the toxicity of the materials in this density range.

NRC Update: No hydrometers are calibrated for this density range currently. Pycnometers are calibrated for use with liquified gases.

Miscellaneous

12. Requirement for certain field strength measurements which are used in electromagnetics susceptibility tests for new measuring devices.

NRC Response: INMS is not equipped to do these calibrations; perhaps in the future, if there is sufficient client demand.

NRC Update: No change in the NRC response.

13. Requirement for the calibration of an instrument measuring the moisture content of high pressure gases (moisture content in the order of 0.03 mol%).

NRC Response: This service has to date never been requested and the service is not available at NRC.

NRC Update: No change in the NRC response.

14. Requirement for the calibration of oxygen sensors to an accuracy of 0.01%. Sensor used with a CTD package to measure dissolved oxygen in seawater.

NRC Response: INMS does not calibrate such devices.

NRC Update: No change in the INMS response.

SUMMARY

NRC is pleased to have been a part of the NCSL Canadian Section Measurements Requirements Survey completed in 1994. A number of areas were identified where additional or improved services we needed and, wherever possible and feasible, NRC has responded appropriately. There were a few areas identified where NRC does not and most likely will not, provide services, simply because there is so very little demand that it would be impossible to justify economically.

We realize that there are still areas where our services could be improved and, indeed, there are areas of improvement yet to be identified. Surveys such as these are very useful to all concerned and NRC fully supports their use. If a need is not identified, it may not get acted on as quickly as might be expected by our clients, so it is critical that the level of response to the next survey be as high as possible, so that NRC is aware of the needs of the marketplace and can act on those needs in a timely, economically-sound manner.

Prepared by
NRC of Canada
Gary Hyser
Dec 1995

QUALITY PROGRAMS

Dave Abell, VP

Activity:

Attended the November "Metrology for the Americas" in Miami and gave a presentation on global standards requirements. This symposium was an excellent opportunity to make new contacts in Latin America and talk about the value of NCSL membership and local activities.

The ANSI Board of Standards Review regarding Rolf Schumacher's appeal was held in New York City in December. I attended and read my prepared statement of opposition to the appeal. Jack Ferris covers this more thoroughly in his report.

Committee Activities

LABORATORY EVALUATION

Leroy Britton & John Wehrmeyer

The handbook to assist in the application of ANSI/NCSL Z-540-1 has been sent to the printer and should be distributed to NCSL members in February. The handbook will also be available in loose leaf format for those who prefer that for the checklist pages.

CAL SYSTEMS:

J. Wade Keith

Wade has been testing a PC Windows based program for running the next Benchmarking Survey and it looks to be very promising.
greatly simplifying the task of collecting and analyzing the returns. Paper versions of the survey will be made available to members who do not have access to a Windows PC.

CAL INTERVALS
Dr. Howard Castrup

Howard has completed the August '95 board requested technical review of RP-1 on Calibration Intervals and is ready for the final BOD vote at the January 1996 meeting. The document is camera ready and can be published shortly thereafter.

TQM COMMITTEE
Jack Ferris

Ed Tong of Hewlett-Packard attended the ASTM E-36 meeting in Virginia. This committee represents the US interests in the development of ISO/JEC Guide 25. He has volunteered to be liaison to this committee for NCSL.

Report

For TQM report, see lead article, page 24.

A meeting of the Z540 committee was held in conjunction with the Measurement Science Conference in Anaheim on January 24. Ms. Lynne Nuemann of Ertella Corp., the US representative to the ISO Guide 25 writing group, made a presentation on the most recent draft of the revisions to ISO Guide 25. The draft will be sent to everyone on the committee roster with a request for comments to be sent to Ms. Neumann.

I attended a meeting on traceability issues held by Ms. Georgia Harris to represent the Z540 committee. I also have been invited to attend a meeting in February in the Washington DC area by the U.S. representative to TC 176 to discuss ANSI/NCSL Z540-1-1194, ANSI/ASQC M1, ASQC M@, ISO 10012-1, and ISO 10012-2.

In addition, I have answered numerous questions about the Z540-1 standard from users, primarily contractors to DoD.

INTERNATIONAL MEASUREMENT COORDINATION
Graham Cameron

Graham Cameron attended the European Cooperation for Accreditation of Laboratories (EAL) General Assembly November in Brussels and presented a Liaison Delegate report to the Board.

Directory of National Measurement Laboratories (Objective 5)

Committee member Henry Sostman has now received responses from the Temperature sections of thirty national measurement laboratories. Currently each laboratory's capability, complete address, and contact person is listed on a separate page.

To serve international metrological needs, it was agreed that the documents should be made available to members, and as a concrete expression of NCSL's thanks for taking the time to contribute information, to each cooperating laboratory.

It is recommended that:

a. the listing be published initially, as an NCSL writer document, and

b. in the next NCSL directory.

A sample from the 33 page document, prepared in MS Word 5, was displayed on the overhead. Henry can make the next available in Word Perfect 5.1.

The next step will be to seek information on ranges and uncertainties achieved in other parameters.

Metrology Training at Fleming College, Peterborough Ont, Peterborough, ON (Past President responsibility)

"Metrology-specific" subjects have been integrated into the New Technology Division curriculum to begin in September 1996. The NCSL funding will be announced in March/April 1996 and the writer and Paul McIntyre of the National Research Council of Canada will make a presentation to Fleming students in that time frame. Performance-based awards will be presented to school-selected students at the 1997 Spring Award ceremony.

Ad-Hoc Committee on Multi-media

Finalization and distribution of the Spanish language version of the NCSL video completes the tasks for this committee. Tony Anderson, Wilbur, and I were involved in selecting the audio-visual house that filmed the video in 1992 and developed the product. Several NCSL persons validated the Spanish translation, including Georgia and Puerto Rican members. Screening of the Spanish video at the "Metrology of the Americas", follow-on circulation and selected distribution made by myself at the EAL General Assembly, represent communication of the NCSL message to a new language sector. It is recommended that distribution of additional Regional Vice-President.

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MEASUREMENT SCIENCE AND TECHNOLOGY

Georgia Harris, VP

AUTOMATIC TEST & CALIBRATION SYSTEMS

Dave Nebel

No Report

MEASUREMENT COMPARISON PROGRAMS (MCP)

Jim Wheeler

The MCP highlights can now be found in the NCSL area of the GIDEP BBS.

Editor's Note: See GIDEP Internet address on page 15.

A meeting of the MCP Recommended Practice committee took place at Measurement Science Conference in Anaheim. Present were Miguel Cerezo (JPL), Ron Ginley (NIST Boulder), Les Huntley (Les Huntley Metrologist Inc.), George Harris (NIST and VP NCSL Measurement Science and Technology) and myself. We set up an outline for the RP and discussed content. We will meet again in Monterey. The outline follows this report.

NCSL in Monterey will feature a Measurement Comparison Program Session. Les Huntley (Les Huntley Metrologist Inc.) will
present The 1995 NCSL 10 V Josephson Array Interlaboratory Comparison, Tom Larason (NIST) will report on the Results of the NCSL UV Irradiance Round Robin and Brian Conroy and John Chabra (Litton Guidance and Control) will present Evaluating Interlaboratory Tests Using the Youden Diagram. Brian held a workshop at Measurement Science Conference in Anaheim entitled Interlaboratory Performance Evaluation Using the Youden Diagram Method.

At MSC, the recommended practice group of the MCP Committee had an informal get-together, (clockwise) Georgia Harris, Les Huntley, Jim Wheeler, Miguel Cerezo, and Ron Ginley.

The Cylindrical Ring RR is in progress according to Mr. Steve Morse (Superior Gage). Call Steve at (918) 456-1554 for more information.

Mr. Marc Buttler (Micro Motion) is looking for participants for a flow round robin. It is scheduled to start in March 1996 and finish approximately March 1998. There are international participants. The artifact is a Micromatic Model CMF100 Coriolis Flow Meter. Marc will present results of this effort at a future NCSL meeting. Call Marc for more information at (303) 530-8562 or FAX (303) 530-8596.

A new mass round robin started in January 1996 according to Mr. Dave Dikkcn (Minnesota Department of Public Service). There are 10 laboratories interested at this time and the round robin will last approximately one year. Dave invites international primary laboratories to participate in this round robin. The artifacts consist of 2 sets of kits from 1 mgm to 1 Kg. The round robin includes density and magnetic permeability measurements. Call Dave to participate or for more information at (612) 639-4010.

Mr. Brian Fitzpatrick (Hi - Tech Inc.) is looking for a pivot lab to support a pressure round robin. The artifact is a Paroscientific 200 psig Digital Pressure Gage. There are ten participants interested. NIST is participating. Mr. Clyde Orrison (Texas Instruments) reports that the RF power RR is in Round 8 and is now starting. The artifact is a Type N Connector Model HP 8478B Thermistor Mount. Clyde can be reached at (214) 995-5032.

ARFTG Verification Kits

The Automatic RF Techniques Group (ARFTG) MCP chairman is Mr. Bob Judish (NIST, Boulder). Bob can be reached at (303) 497-3380. ARFTG is continuing their round robin efforts with vector automatic network analyzers.

Mr. Phil Yates (JPL) is the coordinator for the 3.5 mm Verification Kit Round Robin. Phil can be contacted at (813) 354-2981.

Ms. Connie Ondrejka (NIST, Boulder) is the coordinator for the 7 mm Verification Kit Round Robin. Connie can be contacted at (303) 497-3524.

Mr. Pat Notan (Lockheed Martin) reports that 28 laboratories have measured the Type N Verification Kit Round Robin with five labs waiting. He has 36 good data sets. The effort started in June of 1991 and is on-going. The kit consists of a 20 db Attenuator, a 50 db Attenuator, a Beatty Standard Airline, a Beadless Airline, and a set of Offset Shorts (M/F). Call Pat at (408) 756-2144 for more information.

Mr. Ed Daws (Wiltron) has four participants in a 2.92 mm K Connector Verification Kit RR. This is also a on-going RR. The kit consists of a 20 db Attenuator, a 40 db Attenuator, a Beatty Standard Airline and a Airline. Ed is looking for more laboratories to participate. He can be reached at (408) 778-2000.

For further information on the MCP committee call Jim Wheeler (Navy Primary Standards Laboratory) at (619) 545-9698.

Measurement Comparison Program Recommended Practice Outline

1 Preface
2 Scope
3 Definitions
4 Principles of Interlaboratory Comparisons
4.1 Ethics
4.2 Goals and Types of Interlaboratory Comparisons (includes patterns/design)
4.3 Participants & Responsibilities
4.4 Financial Aspects
5 Planning and Preparation of Interlaboratory Comparisons
5.1 General
5.2 Objectives
5.3 Proposals for Interlaboratory Comparisons
5.4 Number and Choice of Laboratories
5.5 Selection of Artifacts, Parameters, Procedures, Uncertainty and Design of Experiment
5.6 Care, Handling and Shipping of Artifacts
5.7 Criteria for Evaluation
6 Conduct of an Interlaboratory Comparison
6.1 Reference Values
6.2 National Transport
6.3 International Transport
6.4 Implementation and Administrative Tasks
7 Reports
7.1 Data Reporting by Participating Laboratories
7.2 Evaluation
7.3 Interim Report
7.4 Final Report
7.5 Publication
8 Process Improvement
8.1 Laboratory Questionnaire
8.2 Historical Value (repetition over time)
8.3 Tools: SPCs, Ishikawa Diagrams, Pareto Charts, Brainstorming
8.4 Value of Knowledge Base

9 Appendices
9.1 Flowchart for Conducting ILCs
9.2 Sample Receipt Form
9.3 Sample Dispatch Form
9.4 Sample Instructions for Coordinators
9.5 Sample Instructions for Laboratories: Care and Handling, Measurements, Shipping
9.6 Summary of Laboratory Results
9.7 Examples of Data Analysis
9.8 Software and Tools

U.S. NATIONAL MEASUREMENT REQUIREMENT
Laurie Baker & Miriah Arthur

Miriah Arthur (Wavetek) will join Laurie Baker as the co-chair of the US National Measurement Requirement Committee.

The Committee met on January 25 at the Measurement Science Conference. The committee is looking at a method of grading various measurement services in addition to looking for critical areas for emerging technologies. Other areas of interest that the group will evaluate are NIST participation in interlaboratory comparisons and training. The committee plans to work closely with NIST staff prior to collection of data and prior to publication of a final report.

Report

The US National Measurement Requirements committee requests assistance from people willing to participate in gathering information for a survey of the current status of NIST calibration services. The participation will consist of making phone calls to known NIST customers to request that they complete a simple questionnaire, which will be transmitted to them by fax, and return it similarly to either the person making the phone call or to the respective chairperson of the relevant subcommittee.

The questionnaire requests the respondent to provide information, for each calibration parameter that they use, regarding their satisfaction with the overall level of services as well as other aspects in a format that can be quantified. Entries for comments, suggestions, staff recognition, and notes describing measurement inadequacies are encouraged by the inclusion of separate line items.

By conducting the survey in this manner, the NMRC hopes to realize a more representative response than those using surveys conducted by mail where 10% responded. With a planned publication later this year; first draft of the report by conference time in August, your support is urgently requested. Please volunteer by contacting the subcommittee chairperson for the area that suits your preference:

<table>
<thead>
<tr>
<th>Subcommittee</th>
<th>Chair</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC &amp; Low Frequency</td>
<td>Ray Kletke</td>
<td>(206) 356-5694</td>
</tr>
<tr>
<td>RF &amp; Microwave</td>
<td>Pat Nolan</td>
<td>(408) 756-2144</td>
</tr>
<tr>
<td>Electro-Optical</td>
<td>Laurie Baker</td>
<td>(714) 762-7864</td>
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<td>Pressure/Vacuum/</td>
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<td>Temperature</td>
<td>Laurie Baker</td>
<td>(714) 762-7864</td>
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<tr>
<td>Dimensional/Physical</td>
<td>Jim Kwak</td>
<td>(505) 845-8286</td>
</tr>
<tr>
<td>Flow</td>
<td>Monty Gee</td>
<td>(909) 273-2955</td>
</tr>
<tr>
<td>NMRC Co-chair</td>
<td>Miriah Arther</td>
<td>(619) 279-2955</td>
</tr>
</tbody>
</table>

As you can see, we are lacking a subcommittee chair for the Electro-optical community. We are seeking a candidate for this position as well. This also is an urgent need as the measurement areas for these disciplines require knowledgeable coverage.

INTRINSIC & DERIVED STANDARDS
Dr. Richard Pettit

The NCSL Intrinsic/Derived Standards Committee met during the Measurement Science Conference (MSC) in Anaheim, CA. The following represents a status of the various Working Groups sponsored by the committee that are developing a Recommended Intrinsic/Derived Standards Practice (RISP):

Rand Elmqist, NIST, chairman of the Quantum Hall Resistance working group, has completed a draft document which is currently being reviewed by all members of the working group. The document will include a research paper describing the DVM method to realize the standard as an appendix. It is expected that the RISP will be ready for the full committee review by early 1996.

D. Duff, A-Metrology-Z, is chairman of a working group that is developing a RISP on Two-Pressure Humidity standards. The group has not met since the NCSL meeting in Dallas.

A Reference Catalogue documenting over 40 intrinsic/derived standards is being developed by R. Pettit, Sandia. An Introduction Section, with definitions, needs to be added before a draft is circulated to the committee members for comments. The draft should be ready for review by the full committee before the NCSL meeting in August 1996.

C. Ehrlich, NIST, and Laurie Baker, Rockwell, have updated the RISP on Deadweight Pressure Gauges based on comments obtained at the 1995 NCSL meeting in Dallas, TX. This revised draft will be reviewed by the working group on the day before the MSC in Anaheim, CA. The final document will be ready for review by the IDSC committee members and the full working group by the NCSL meeting in 1996. Following this review, a finalized document should be ready for publication by the NCSL annual meeting in 1997.

Additional definitions of an Intrinsic Standard were developed by John Bull, US Army, and circulated to the committee for review. A new definition will be discussed at the MSC meeting in January.

CONSENSUS STANDARDS
Dean Yarolimek

Dean Yarolimek is "advertising" for input and participation in the Consensus Standards Committee. Anyone interested in participating on this committee may contact Dean at: 314/232-4423 or by e-mail at: M1866115%SLVMA.pros@mdgwy.md.com.

Critical concerns related to "traceability to national or international standards where no known standards exist" are driving the need to create a catalogue or listing of "accepted" consensus standards. In some cases in the past, national capabilities have been developed for consensus standards based on need.

TRACEABILITY RESOLUTION:

Traceability Resolution Meeting, Measurement Science Conference
January 25, 1996
A group of 20 NCSL Committee Chairman, NCSL VP's, U.S. accreditation body representatives, and interested parties met at the 1996 Measurement Science Conference to discuss issues related to traceability that have been raised during the last few years.

Discussion Topics

- The traceability section of the fourth draft of the ISO Guide 25 update was reviewed. The international [VIM 6.10] definition is referenced in the document but the section refers to traceability to SI units demonstrated through documented evidence of compliance to this document [ISO Guide 25]. The group provided input to Pete Unger and Lynne Neumann (U.S. representatives on the updating committee) for the ILAC meeting in March 1996.

More specific reference to the VIM definition along with reference to the time dependency of a calibration and the need for repetitive measurements over time was recommended. Clarification of Z 540-1-1994 Section 9.3 related measurements was also suggested. The use of certified reference materials (standard reference materials) and the international approach that certification implies 3rd party certification was discussed.

- The VIM 6.10 definition (1993) was reviewed: “property of the result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties”

- Issues were discussed related to “horizontal comparability” between national laboratories and the use of gateway laboratories of the major trade blocs to establish comparability for agreements establishing mutual equivalence between regional metrology organizations.

- The issues of “vertical traceability” (i.e. going down the hierarchy from the national laboratory) with certificates (and test numbers) from a national laboratory and laboratory accreditation were discussed.

- The definition of intrinsic standard was discussed. A recommendation was made for the Z-540-1-1994 Handbook to reference the Note in section 9.2 regarding a definition for intrinsic standards as follows: Intrinsic standards are based on well characterized laws of physics, fundamental constants, or invariant properties of materials, and they make ideal stable, precise, and accurate measurement standards if properly designed, characterized, operated, monitored and maintained.

Regarding traceability of intrinsic standards, the remainder of the note includes: Where intrinsic standards are used, the laboratory should demonstrate by measurement assurance techniques, interlaboratory comparisons, or other suitable means that its intrinsic standard measurement results are correlated with those of national or international standards [similar to comparability between national laboratories].

- The use of consensus standards was discussed related to situations where traceability to national or international standards is not available. The new NCSL Consensus Standards Committee has been established to collect, evaluate, and catalogue measurement standards where the traceability process is absent, but where documented standards exist (or can be written for new measurements) that are mutually agreed upon by all parties concerned. It was noted that in some cases, consensus standards may be tempo-

rary until standards can be developed at the national laboratory for establishing traceability.

- The use of Interlaboratory Comparisons (ILC’s) to establish traceability (as used for accreditation) was discussed related to its inclusion in a Recommended Practice. Several examples were considered:

  - A situation where NIST manages an interlaboratory comparison directly between that laboratory and NIST, where NIST may not issue calibration reports for measurements made in the affected laboratory, but traceability is established or verified (example formal NIST Measurement Assurance Programs). This example was considered acceptable for establishing traceability.

  - A situation where an accredited laboratory conducts one interlaboratory comparison with other laboratories to establish traceability in the other laboratory. This example was not considered acceptable for establishing traceability.

  - A situation where an accredited laboratory conducts a series of measurements over time with other laboratories (using a process similar to a NIST MAP) to establish traceability. This example was considered acceptable.

  - A situation where a laboratory has a calibration report that is extremely old, with a measurement assurance program in place, with periodic ILC’s (with valid traceability of the artifacts) used to monitor current validity of calibration data. This issue was frowned upon and would require extensive documentation to verify adequacy followed by acceptable results on a proficiency test. The strict interpretation is that unless there is a standard (for the parameter) with prescribed calibration intervals, there is no accreditation requirement to have calibrations based on any specific fixed interval. [NIST perspective is that traceability needs calibration to be performed in periodic intervals for adequate confidence.]

Issues to be Resolved

* An NCSL position paper on the use of NIST Numbers is being prepared.

* Education related to traceability is critical (for auditors and users of calibration laboratories).

Georgia Harris

Participants

Ramona J. Saar A2LA
Peter S. Unger A2LA
Jack Ferris Consumers Power Co
John A. Wehrmeyer Eastman Kodak
Lynne Neumann Entela, Inc.
Bill Sorrells Hewlett-Packard
Les Huntley Les Huntley Metrologist, Inc.
Klaus Jaeger Lockheed Martin
Paul D. Levine Lockheed Martin
Dean R. Varolimek MDA (St. Louis)
Jim Wheeler Navy Primary Stds Lab
Jon Crippenberger NIST/NVLAP
Ron Ginley NIST
Chuck Ehrich NIST
James L. Cigler NIST/NVLAP
Georgia Harris NIST
 Prepared a proposal for committee reorganization consistent with vision 2000 and reviewed with Gary Shuler.

Committee Activity:

UTILITIES COMMITTEE
John Ragsdale & Jack Burdick

The NCSL Utilities Committee met at the Southern California Edison Calibration Laboratory in Westminster, Ca. on January 23, 1996. Seventeen members attended the meeting representing 12 different utility companies.

Robert Gangawer from Guildline Instruments updated the committee on the production status of the Model 3015 clamp-on current meter that was demonstrated at our meeting last January. It should be in production by the end of April. Mr. Gangawer also demonstrated the operation of the Guildline Model 6675 Automatic Resistance Bridge.

Tracy Harper of the Baltimore Gas and Electric Company led a discussion focused on developing the content of the future survey of member utility company calibration laboratory capabilities. The committee members decided that a capability survey would be more useful than the traditional salary/staffing surveys that we have conducted in the past. By defining the size and scope of member laboratories, it will make it easier to identify those laboratories that might be useful to benchmark against. Mr. Harper will refine the survey and it will be mailed to all members of the committee later this spring.

Curt Casto and Harold Kochenderfer presented a demonstration of the SCE Metrology Management Software that was developed for use at the SCE Laboratory. It is a very impressive system. After their presentation they answered many questions from those of us that are developing similar systems or are considering updating systems that are currently in use.

The committee reviewed the final draft of the Recommended Practice on Software Verification and Validation. The document will be submitted to the NCSL Board of Directors for their approval at the Board meeting January 29, 1996. (Note: The Boards of Directors approved the document and it will be published as "RP-13, Computer Systems in Metrology").

During the past two or three years many of our member companies have been downsized and many of the individuals that were active on the committee have retired or have taken other positions with other non-utility companies. To update our mailing list we are asking everyone that wishes to continue to receive meeting minutes and meeting notices to contact Jack Burdick and provide him with their current mailing address. This information can be FAX'd to Jack at (714) 895-0665.

HEALTHCARE METROLOGY COMMITTEE
George Emerson and Mitch Johnson

John Miche, Marine Instruments, recently resigned as committee co-chair. Highlights of his accomplishments as co-chair include development of panel sessions for the annual NCSL symposium, organization of committee meetings and activities at the annual NCSL symposium and publication of articles in the NCSL Newsletter. Please join me in thanking John for his service to the committee.

I'm pleased to announce the appointment of Mitchell Johnson, Angelon Corporation, as the new committee co-chair. Mitch has extensive experience in the medical device industry. His phone number is (612) 550-9388.
Committee News

Summary of October 26, 1995 Meeting

On October 26, 1995, the Healthcare Metrology Committee met at the Chiron Corporation, Emeryville, CA. Howard Mangrum, Manager of Instrument Services, opened the meeting and described the role of the Instrument Services department at Chiron. The meeting featured three speakers:

- Use and Calibration of Pipettes, Albert Wang, Product Manager, Pipetting Systems, Rainin Instrument Company
- Metrology for Industrial Ventilation, Martin Burke, Field Service Manager, Technical Safety Services
- Training Qualifications - One Company’s Approach, Mike Magin, Engineer, Southern California Edison

Following the meeting, Rainin Instruments hosted a tour of their Emeryville manufacturing facility and conducted a hands-on pipette inspection clinic.

The meeting was attended by 45 people representing 23 companies.

The committee thanks Howard Mangrum and Steven Villa, Chiron Corporation, for their efforts in hosting the successful meeting and the Chiron Corporation for providing both the meeting auditorium and lunch.

Next Committee Meeting

Ralph Sabiel, RS Calibration Services, volunteered to organize future meetings of the Healthcare Metrology Committee in the San Francisco Bay Area.

The next meeting will be held on April 10, 1996 and will be held by the Scios Nova Corporation in Mountain View, California. The focus of the meeting will be, “A Day With Your Water System”. Planned topics include Maintenance of USP & RO Water Systems and Total Organic Carbon Analyzers. For more information please contact Ralph Sabiel, RS Calibration Services (510) 462-4217 or George Emerson, Genentech Inc. (415) 225-6789.

PETROLEUM INDUSTRY METROLOGY COMMITTEE
Ben Jack

No Report

EDUCATION AND TRAINING
Don Dalton, VP

Activity:

We partnered with John Gerhard to mail out the part 2 of the “Metrology Education & Training Study” to our members.

I have made a change in committee chair positions. The sub-committee working on training requirements was meeting in Denver (Jan ’96) and requested that Tom Kimbrell remain as the chairman when the sub-committee becomes the Personnel Training Requirements Committee. We agreed that Tom would take on this additional job. I want to thank LeRoy for his willingness to serve as chair and for his eagerness to continue to serve NCSL as a committee member.

The sub-committee just met in Denver prior to the National Science Foundation sponsored DACOM (Design of Curriculum) for a four-year Metrology Engineer program. This was a very interesting process that will be reported more thoroughly at the May BOD meeting. Tom Kimbrell did a great job.

Bill Sorrells has agreed to work with John Minck, Newsletter Editor, to coordinate “Training Information” section of the Newsletter.

Committee Activity:

EDUCATION SYSTEM LIAISON
Tom Kimbrell

This quarter most activity was limited to telecom discussion to various schools and industry answering questions and sending curriculum materials.

We continued with the personnel requirement subcommittee. A preliminary paper on education and training needs has been prepared.

We sent out applications for education awards. These were received and sent to the members of the education group 160 for evaluations. Responses indicate that Butler Community College, Community College of Aurora, Hutchinson Technical College and the Amarillo Technical Center receive awards.

We continue to work on curriculum for 2-year, 4-year and graduate colleges. I propose this to the BOD in August at Monterey.

TRAINING INFORMATION DIRECTORY
Dave Lorenzen

The 1992 edition of the NCSL Training Information Directory was completed and 1369 copies were mailed to members on 27 October 1995. A supply of 275 copies was shipped to the NCSL Business Office in Boulder for use in new member packages and for the NCSL Publications Club. The remaining 106 copies will be sent to the course sponsors or utilized by the committee.

The legibility was improved this year by using a slightly larger font having better clarity. The larger font along with additional training information resulted in four additional pages in the size of the directory year.

TRAINING RESOURCES
Bill Sorrells

A list of training offerings from several sources were included in the training section of the newsletter. I am continuing to collect the feedback from the Reference Library users and load it into the spreadsheets for analysis.

I added new training material to the library and also removed some old, out-of-date, and obsolete material from library. I provide quarterly input to the training information section of the newsletter with references to sources of training resources.

The network of people who can help identify E&T information resources just has not happened. Individual sections have not assigned or otherwise identified someone in the section to help gather training information.
In 1996, I plan higher priority to establishing any contacts with other professional or technical organizations training resources.

LABORATORY SYSTEMS
Brian Fitzpatrick, VP

Activity:

We’ve continued work on the action item requesting publication of a Newsletter article with regard to the use and abuse of the term "certified" in reference to ISO and other registering/accrediting bodies. I’ve received a reply from Helaine Johnson at ASQC and have spoken with Bob Peach and he supports the effort wholeheartedly.

We agreed that the article should be endorsed by both the NCSL and the ASQC (an official statement of policy).

Committee Activity:

We’ve continued work on the pressure round robin. As I reported in my last report, the pivot lab has requested funding in order to cover the costs of freight and labor, at a zero profit level. The pressure round robin is suspended at this time, due to no funding.

The Deadweight Gage Committee on which I serve has also been denied funding to cover the cost of the artwork for our publication.

EQUIPMENT MANAGEMENT FORUM
Charlie Motzko

We’re actively searching for a volunteer to assume the Chairmanship of the Equipment Management Forum with the approval and support of their company and the Laboratory Systems Management VP.

Bill Uphoff, with TRW, is handling Annual Conference Speakers for the EMF track. He has two workshops committed plus six possible papers for the EMF track in Monterey ‘96.

Action Item:

The primary open action item is to report out the projected timelines of PUBLICATIONS & RECOMMENDED PRACTICES Committee and schedule for an RP dealing with shipping & transportation of GPTE and Standards.
McDONNELL DOUGLAS CORP SYSTEMS COMMITTEE MEETS IN MONTEREY

The McDonnell Douglas Corporation (MDC) Metrology Systems Committee (MSC) will again, for the second year, hold their semi-annual corporate Metrology workshop in conjunction with their attendance at the NCSL 1996 Workshop & Symposium in Monterey, CA., August 25 to 29, 1996.

Dean R. Yarotsimek, the committee chairman, stated that such scheduling allowed MDC to reduce committee travel related expenses and provided increased opportunity for the MDC MSC membership to attend NCSL workshops. It is without a doubt, a “win/win” situation for both MDC and the NCSL.

Editor’s Note: Other companies also have taken advantage of the NCSL gathering for similar meetings, Hewlett-Packard comes to mind.

METROLOGY FOR THE AMERICAS

INDUSTRY AND GOVERNMENT JOIN TO ESTABLISH INTERNATIONAL METROLOGY STANDARDS

Molly Dempsey,
Fluke Corp.

For three days in early November, industry and government heavy-hitters met to discuss calibration standards in the Western Hemisphere. Sponsors designed the Metrology for the Americas symposium to share technology, eliminate artificial trade barriers and open lines of communication. This symposium marked the first step in a complicated process of establishing hemisphere-wide metrology standards.

Pat Lein, organizing committee chair and Fluke Corporation’s international regional sales manager for Latin America and the Caribbean, says, “Quality standards are no longer a choice for international companies; they are now a requirement, mandated by international quality organizations like ISO 9000. As countries develop internal metrology systems to support these requirements, they may be developing inadvertent trade barriers. Those barriers can make international trade difficult.

Trade barriers affect competition in world market

Don Dalton, Fluke’s marketing manager for Calibration, describes an artificial, non-tariff, trade barrier between the U.S. and Europe. When Fluke sells products, it wants the calibrations made at the point of manufacture to be accepted and useable to customers in their country. Meeting this need requires a system of world-wide calibration agreements. This process exists within Europe, where most national calibration organizations have multilateral agreements of recognition. Anything calibrated by the National Institute of Standards Technology (NIST) in the U.S. may be accepted by the local national lab, but when it comes to commercial labs, things get complicated. Fluke must re-certify in Europe anything calibrated in the U.S., even though Fluke calibrations meet NIST’s standards. This cost of re-calibration and slower delivery time make Fluke products less competitive in the European market. Don says, “As more international accreditation systems are put in place and recognized on a global basis, measurements made by an accredited laboratory in one country will be accepted in another country, reducing redundant calibrations and lowering technical and economic trade barriers.

Keynote speaker Dr. Mary Good, the Undersecretary for Technology for the U.S. Department of Commerce opened the meeting by agreeing to continue working toward worldwide standards acceptance to allow trade to flow more freely. Otherwise, exporters will find that quality requirements become worldwide trade barriers, she said. Dr. Good suggested one-stop testing and calibration in the sense of a hemispheric economic community wherein products don’t have to be tested and retested and retested.

Opportunities ahead for MAS

Organizers and participants agree that MAS will further the cause of trade and technology in the Americas. Henry Opperman, of NIST’s Standards in Trade program, says, “The MAS has definitely helped NIST because it was consistent with our objectives. [The symposium] demonstrated the interest of U.S. government and industry to provide technical assistance in the Americas as a means of promoting the Free Trade Area of the Americas.” MAS provides a forum for government and industry to work on achieving mutual trade and technology goals with experts from all over the Americas. This gathering of all parties involved ensures consideration of everyone’s input.

Organizing committee members left with a clearer view of the issues and how they might positively affect change. Bill Hoffman, vice-president of Fluke’s Calibration business group said, “We had discussions with 225 people from 21 countries. Eleven national laboratories were involved . . . We have opened doors with this symposium.” The organizing committee hopes to conduct similar conferences within Latin America, though on a smaller, more locally focused scale.

Metrology for the Americas
Sponsoring Organizations

Fluke Corporation
Hewlett-Packard Co.
Guildline Instruments
Federal Aviation Administration
National Conference of Standards Laboratories
National Institute of Standards and Technology
Organization of American States
They are always a little late in arriving, but the Progress Reports from the NIST EEE Laboratories is always interesting because of the wide variety of work that is reported therein.

You can get yourself on the mailing list by contacting:

J.M. Rohrbaugh
Compiler
EEEL NIST
Gaithersburg, MD 20899

TWENTY FIVE YEARS OF EDUCATION IN MEASUREMENT SCIENCE

This year at the Measurement Science Conference, they celebrated twenty five years of accomplishments. Those of us who remember the early years at Cal Poly, San Luis Obispo, recall the relaxed environment in that lovely college town by the Pacific Ocean. The original intent was to hold a conference which could involve technology students in industrial affairs, and I think it did that pretty well.

But success made the conference bigger and they outgrew the central California location. In later decades, the Southern California venue worked better and drew a true international crowd.

MSC produced a small remembrance booklet this year for their 25th anniversary. If you didn’t attend, and would like to get a copy of the publication, you could contact:

Chet Crane, MSC Liaison
10171 Pimlico Dr.
Cypress, CA 90630-4144

NCSL POSITION ON THE PURPOSE AND APPROPRIATE USE OF NIST TEST NUMBERS

It is the position of the National Conference of Standards Laboratories (NCSL) that:

Test numbers issued by the National Institute of Standards and Technology (NIST) of the United States Department of Commerce are intended to be used solely for administrative purposes. Although these numbers are potentially useful in gathering information that might be needed to determine the quality of a test or measurement, NIST test numbers should not be used nor required as proof of the adequacy or traceability of a test or measurement.

It should be noted that nationally and internationally recognized standards dealing with test and measurement quality requirements such as ANSI/NCSL Z540-1-1994, ISO 10012, ISO-25, and the ISO 9000 series do not require the use or reporting of NIST test numbers.

The NCSL generally encourages that adequate test and measurement quality should be assured by estimating the uncertainty of the test or measurement results and then determining that the risk associated with the estimated uncertainty is acceptable to the parties concerned. An appropriate method for estimating measurement uncertainty can be found in the NCSL Recommended Practice, RP-12, “Determining and Reporting Measurement Uncertainties.”

NCSL Position Statement, (Draft 1-19-96)
At the time of retirement of Dr. Joe Simmons in 1994, NCSL was pleased to have a new NIST Representative to the NCSL Board of Directors appointed, Dr. Peter Heydemann. In the short time he has been assigned to that post, he has become very helpful in all our dealings with NIST, and he carries on a great tradition of NIST Delegates. His knowledge of international metrology organizations and agreements makes him particularly useful in advising NCSL.

At NIST, Dr. Heydemann assumed his position as Director, Technology Services, in November 1993. He is responsible for developing an international trade support program; providing technical support to the U.S. voluntary standards system; providing uniform and accurate measures for domestic and international trade; providing measurement and standards services to U.S. industry, government agencies, and the public; and overseeing the State Weights and Measures systems.

He also leads in negotiating agreements with foreign governments and organizations on mutual recognition of calibrations and conformance tests; for the operation of the National Voluntary Laboratory Accreditation Program and organizing cooperation between U.S. industry and NIST on research and development. Use of NIST facilities, guest researchers, patents and licenses; providing information to industry on standards (current or under development); and for the dissemination of a large body of technical information.

From 1988 to 1993 Dr. Heydemann served as Science Counselor at the U.S. Embassy in New Delhi, India. As Science Counselor, Dr. Heydemann provided advice and assistance to the Ambassador and other senior members of the staff on scientific and technical matters. He reported on significant technological developments in India to the Departments of State and Commerce, and to scientists and engineers in other Federal agencies.

Dr. Heydemann was involved in negotiations on nuclear matters and space launch capabilities. He was also responsible for maintaining and expanding the scope and quality of a large program of cooperative scientific research projects. For his services he received the Department’s Superior Honor Award.

Before going to India, Dr. Heydemann served as Deputy Director of the National Industrial Technology Services at the U.S. National Institute of Standards and Technology (NIST). He was responsible for developing the concept of the Advanced Technology Program (ATP) and the Manufacturing Engineering Partnership Program (MEP), a major program to make Federal S&T resources available to small-and mid-sized companies.

Earlier Dr. Heydemann held a succession of distinguished positions in measurement science, high pressure physics, basic research on polymers, chemical physics, and in science administration. Some of the various positions Dr. Heydemann has held since his arrival to the National Bureau of Standards/National Institute of Standards and Technology in 1964 include:

1986 - 1988 Director, Center for Basic Standards
1981 - 1986 Associate Director for Programs, Budget, and Finance
1980 - 1981 Director, Center for Chemical Physics
1979 - 1980 Chief, Program Office
1978 - 1979 Program Analyst, Office of the Director
1971 - 1978 Chief, Pressure and Vacuum Section
1964 - 1971 Group Leader, High Pressure Physics

He is the author of more than 60 scientific and technical papers, several book chapters, and a book on Indian history. He is a member of the U.S. Senior Executive Service and a recipient of the President’s prestigious Meritorious Executive Award.

Dr. Heydemann’s favorite hobby is history, particularly Indian history before 1500 B.C. In his “free time,” Dr. Heydemann developed, operated, and later sold F+H Instruments, a small high-technology company specializing in RF pulse and analog instrumentation.

Personal Data: Born November 10, 1928; two children, Christian and Ahlke (both scientists).

NEW COMMERCE DEPARTMENT COLLABORATIVE FACILITY FOCUSES ON EMERGING "PARALLEL" MACHINE TOOLS

A new manufacturing-research facility aimed at refining and extending the raw capabilities of an emerging—and potentially revolutionary—class of prism-shaped machine tools has opened its doors at the Commerce Department's National Institute of Standards and Technology in Gaithersburg, Md.

Promising an unprecedented combination of versatility, stiffness, speed and accuracy the geometric oddity at the center of NIST's new National Advanced Manufacturing Testbed exemplifies the first major departure in machine tool design in nearly a century. Several U.S. and foreign machine tool makers are pursuing variations on the same geometric theme, while prospective customers are beginning to contemplate what the novel technology might mean for their manufacturing operations.

Among domestic manufacturers exploring those possibilities, Pratt & Whitney, the Connecticut-based maker of aircraft engines, is the first to join with NIST manufacturing researchers to study the unique capabilities of the new, so-called "parallel" machine tools. Other U.S. companies and several universities are exploring cooperative research opportunities at the testbed.

Since June, NIST scientists and engineers have been benchmarking the capabilities of an "octahedral hexapod." Built by the Igersoll Milling Machine Co., the hexapod is representative of the small, but growing class of parallel machine tools. After initial characterization of the novel technology, the research focus will expand to techniques and standards for enhancing the performance of parallel machines in a variety of precision manufacturing applications.

To help manufacturers assess the utility of parallel machines, NIST will work with companies and private standards organizations to develop common performance-evaluation methods. Standardized procedures for characterizing the performance of conventional; machine tools have been developed, but these methods do not apply to parallel machines.

Parallel machines have emerged at a pivotal stage in the evolution of manufacturing. Studies indicate that dimensional tolerances have been decreasing fourfold to tenfold each decade. By the year 2000, tolerances for pistons and other car-engine parts, for example, will be pared to 1 micrometer, a tiny fraction of the width of a human hair. Consistently achieving such demanding tolerances now requires highly specialized machines operating under highly controlled environmental conditions—requirements that add significantly to manufacturing costs.

Contact: Mark Bello, 301-975-3776

NIST UPDATE

Within a relatively short time, NIST was confronted with major disruptions created by furloughs, the move of nearly 500 staff members to a new building located just off the main campus, and near-record amounts of snow. NIST weathered the November furlough with only one day of missed work. It did not fare as well during the three-week long furlough beginning Dec 18. However, we are now back in business and focussed on providing our normal range of services.

Our budget outlook, while no longer grim, is still uncertain. NIST is currently operating under a continuing resolution which provides $240 million for the laboratories and Quality Program. This is the same as the post-recession budget with which we ended FY95. We anticipate a final FY96 budget of $259 million for the laboratories and Quality Program, but have no guarantee at this time. The Manufacturing Extension Partnership has adequate funding but the fate of the Advance Technology Program is still in doubt. We are looking forward to the resolution of the budget impasse.

We sincerely appreciate the need to provide reliable services to our customers and assure you that we are committed to this goal as we recover from major disruptions.

PRECISION ENGINEERING SEMINARS NOW OFFERED FOR RECERTIFICATION CREDITS

The Society of Manufacturing Engineering has approved two seminars offered by the Precision Engineering Division for recertification credits for MECI Certified Manufacturing Engineers (CmfgE) and Technologists (CmfgT). The Gage Block Seminar (18.0 credits) is held each fall at the NIST campus in Gaithersburg, MD. The three-day sessions cover all aspects of the calibration of gage blocks. The Dimensional Metrology Seminar (12.0 credits) that is offered in conjunction with the Measurement Science Conference each January covers the basic principles of dimensional metrology and focuses on the development of uncertainty budgets.

Contact Ted Doinon 301 975-3472

AIR SPEED PROFICIENCY TESTING PROGRAM

The fluid flow group of the Process Measurements Division is forming a consortium with industry to establish an Air Speed Proficiency Testing (ASPT) program. This program is in response to concerns expressed by representatives from industry at a NIST workshop on air speed measurements. The ASPT program will quantify the performance of anemometer calibration facilities operated by anemometer manufacturers, calibration laboratories, and users through a round-robin testing program. Testing will span the air speed range from 0.3 to 15 meters per sec. Using a transfer standard developed as part of the ASPT cooperative research and development agreement, NIST staff will measure the air speed in the participant's wind tunnels. At the same time, the participants will measure the air speed using their instrumentation, measurement techniques and data reduction methods. The results of this direct comparison of the entire measurement process will provide an assessment of the accuracy and a basis for developing realistic air speed measurement traceability of the process.

Contact: Mike Hall 301-975-5947
U.S. AND CANADA MUTUALLY RECOGNIZE TESTING LABS

In an effort to improve trade between the world’s two largest trading partners, NIST and the Canadian General Standards Board recently signed an agreement for the mutual recognition of testing laboratories administered by the NIST National Voluntary Laboratory Accreditation Program and the Laboratory Acceptance Program operated by CGSB. The MRA provides for mutual recognition of testing labs located within the territorial United States accredited by NVLAP and for testing labs within Canada that are accredited by CGSB’s Laboratory Acceptance Program. Both programs meet the requirements of international standards for accrediting labs under ISO/IEC Guides 25 and 58. The CGSB program was established in 1979 and is one of six national certification organizations accredited by the Standards Council of Canada. Established in 1976, the NIST NVLAP program currently has more than 85 accredited laboratories.

Contact: NVLAP, Rm 282, Bldg 820, NIST, 301-975-4016

FINAL FY 1995 AWARDS ANNOUNCED

Four industry-sponsored projects in the Technologies for the Integration of Manufacturing Applications focused program area will receive cost-shared funds for research and development under the NIST-managed Advanced Technology Program. Projects in this focused program area (among 11 programs focused on technology deemed by industry as offering the best opportunities for major economic returns) will work on experimental, highly flexible technologies to simplify the task of integrating and sharing “real-time” data in manufacturing. The awards in this final fiscal year 1995 ATP competition are to three joint ventures and one single company, involving a total of 19 organizations as participants. Included in the 19 are five small business and three universities. If carried to completion the projects will cost approximately $31 million in private industry funding plus an equal amount in cost-sharing by the ATP.

Contact ATP at 800-ATP-FUND or e-mail atp@micf.nist.gov

CRADA MILESTONE MARKED; FY 1995 STATS IN

During the first three months of fiscal 1996, NIST entered into its 600th cooperative research and development agreement since the CRADA mechanism was established by Congress in 1988. Through Dec 31, 1995 (the end of FY 1996’s first quarter), NIST’s CRADA total stood at 608. Statistics for FY 1995 show that NIST signed 81 new CRADAs and terminated 28 during the 12 months ending Sept 30, 1995. Of these, 81 industry/government partnerships, 43 were with small businesses, 26 were with medium/large businesses, 5 were with universities, and 7 were with other organizations. For more information,

Contact Carlotta Foster-Hayes, 301-975-5073.

NIST EM AND OPTOELECTRONIC PUBS INDEXED

Persons interested in the work of NIST’s Electromagnetic Technology and Optoelectronics Divisions will want copies of two new bibliographies of technical publications from these divisions. The period covered extends from the late 1960s until June 1995. The Electromagnetic Technology Division, created in 1978, conducts research in the areas of cryoelectronic metrology and superconductor and magnetic measurements. The Optoelectronic Division was created in 1994 by splitting off the Optical Metrology Group from the Electromagnetic Technology Division. The Optoelectronic Division performs research in the areas of sources and detectors, fiber and integrated optics, optical components, and optoelectronic manufacturing. The Electromagnetic Technology Division develops standards for superconducting wire, applications of superconducting electronics to national electrical standards, and measurement technology for the magnetic data storage industry. A limited number of copies of the bibliographies are available from the editors.

Contact Ann Bradford at 303-497-3768 for “Metrology for Electromagnetic Technology (NISTIR 5040). Contact Annie Smith at 303-497-5342 for “A Bibliography of the NIST Optoelectronic Division (NISTIR 5041).”

REPORT LINKS TECHNOLOGY AND ECONOMIC GROWTH

Do R&D tax credits work better than direct government funding to stimulate corporate research? A new report, "Technology and Economic Growth: Implications for Federal Policy," answers that question and many others that have confused discussions about the economic impacts of technology and effectiveness of government programs. Written by NIST economist Gregory Tassey, the 76-page documents summarizes and interprets several decades of economic research on the economic impacts of technology and presents rationale for government roles in support of technology investment by the private sector.

The report also provides an analysis of some of the more important foreign government policy initiatives in this area. Tassey's main conclusion is that while "industry is the prime mover of economic growth, a technology-based economy requires a range of government infrastructure roles that are more complex than the ones that leveraged the industrial revolution a century ago." Warning that action is being slowed by persistent confusion about technology's impact in a modern economy and protracted debate over the proper roles of industry and government, Tassey's report seeks to clarify the facts and framework for decision on federal policies. Available while supplies last, by sending a self-addressed mailing label to: Greg Tassey, A1000 Administration Bldg, NIST, Gaithersburg, MD, 20899-0001.

BALDRIGE AWARD DIRECTOR REIMANN RETIRES

Curt W. Reimann, first director of the Malcolm Baldrige National Quality Award, is retiring from federal service this month. Reimann was instrumental in establishing the Baldrige Quality Award program as the most prestigious award of its kind in the United States and one that is respected and modeled internationally. He began his career at NIST (then the National Bureau of Standards) as a research chemist in 1962. Reimann's awards and honors include a Presidential Distinguished Rank Award, the Department of Commerce Gold Medal, and recognition by THE QUALITY REVIEW as one of the “Ten Most influential Figures in Quality for 1988.” Current Baldrige Award Deputy Director Harry Hertz will succeed Reimann.
HIGH TEMP SUPERCONDUCTING CIRCUIT FABRICATED

Scientists have built and demonstrated one of the most complex high-temperature superconducting circuits ever designed. This device, a high-frequency oscillator, eventually could be used in receivers operating in the millimeter-wave to far-infrared (terahertz frequency) region. Tunable frequency sources have not been readily available in this region but are needed for applications such as observation of atmospheric gases, astronomy and advanced communication systems.

The oscillator is based on a novel concept developed by guest worker Gerhard Kunkel from the German research institute, KFA-Juelich. It relies on the well-known property of Josephson junctions to convert voltage to frequency at super-cold temperatures. However, these devices have been unreliable when fabricated from so-called high-temperature superconductors. The solution? Using microwave resonators to obtain coherent interactions among the five Josephson junctions. Power was detected from 60 gigahertz to 250 gigahertz with a maximum power of four nanowatts at 160 gigahertz. The next step is to construct an array with many more junctions (up to 100), which will produce a microwatt of power, enough to be useful. To obtain paper no. 25-95 describing this development, contact Sarabeth Harris, Div 104, NIST, Boulder, CO 80303-3328. 303-497-3237, e-mail sarabeth@micf.nist.gov.

HIGH-TEMP SUPERCONDUCTOR DATABASE RELEASED

The NIST High-Temperature Superconductors Database for personal computers provides materials researchers in industry, federal laboratories and universities with rapid access to carefully evaluated information on 24 thermal, mechanical and superconducting properties for oxide superconductors. Standard Reference Database 62 covers approximately 130 series of compounds derived from yttrium-barium-copper-oxygen (Y-Ba-Cu-O), bismuth-strontium-calcium-copper-oxygen (Bi-Sr-Ca-Cu-O), and lanthanum-copper-oxygen (La-Cu-O) chemical families, along with numerous other variants of the cuprate (copper-containing) and bismate materials that are known to have superconducting phases. Materials are described by specification, while characterization information includes processing details and chemical conditions. The data are from approximately 400 papers published in the years 1987-1993. SRD 62, PC Version 1.0, is available for $265 from the Standard Reference Data Program, Rm. 113, Bldg. 820, NIST, Gaithersburg, MD. 20899-0001, 301-975-2208, e-mail: srdata@enrl.nist.gov.

FIND YOUR FUNDAMENTAL CONSTANTS ON THE WEB

In the year since it was introduced, NIST's online database of values of fundamental constants has become more popular than its creators imagined. Over the past 12 months, more than 17,000 individual computer users have accessed the database at http://physics.nist.gov/fundcon.html. This archive provides public access to fundamental physical constants such as the mass of the electron and the Avogadro constant. Use of the fundamental constants database also is growing rapidly. In October 1995 along, individuals from more than 3,300 different Internet addresses accessed the database. The dramatic increase in usage is an indicator of the importance of fundamental constants in science and technology and the credibility of NIST research results.

The database gives values from the most recent Committee of Data for Science and Technology (CODATA) publication of internationally recommended values for the constants. However, researchers have diminished significantly the uncertainties of many of these values since this 1986 publication. Thus, NIST scientists are currently evaluating new values for the constants, under CODATA auspices, and expect to complete an update of the database by January 1997. The fundamental constants database is a product of the NIST Physics Laboratory's Electronic Commerce in Scientific and Engineering Data program.

Contact: Linda Joy, 301-975-4403

CRYSTALLIZATION DATA NOW ON THE WWW

To determine the structure of large complex protein molecules, scientists use protein crystals and bombard them with X-rays. The resulting diffraction patterns help scientists determine molecular structure. However, finding the right conditions for forming protein crystals can be a long and tedious process. The NIST/NASA/CARB Biological Macromolecule Crystallization Database—now available on the Internet's World Wide Web—helps speed the process by offering data on crystallization conditions, macromolecules, crystals and crystallization references. The database recently was redesigned for Internet access at: http://ihm4.cab.nist.gov/4400/carb.html. The searchable on-line database includes 2,353 crystal entries from 1,557 biological macromolecules for which diffraction quality crystals have been obtained. These include proteins, nucleic acids and viruses. The database also contains the NASA Protein Crystal Growth Archive, which includes crystallization data from NASA-supported space experiments. Scientists also can purchase the database from NIST for $340. For purchasing information, contact the Standard Reference Data Program, Rm. 113, Bldg. 820, NIST, Gaithersburg, MD. 20899-0001, 301-975-2208, e-mail: srdata@enrl.nist.gov.

HIGH-FLYING EXPERIMENT SEEKS SAFER SPACEFLIGHT

A NIST-led experiment aboard the recent STS-75 space shuttle mission could help keep the future international space station and its crews safe from fire. NASA and NIST conducted the experiment, the Radiation Ignition and Transition to Spread Investigation (or RITSI), to look at how flames behave in microgravity. The researchers hope to use data from the experiment to learn how to keep sparks from growing into a life-threatening fire aboard a spacecraft. "The trick is to contain the momentary ignition, avoiding any possibility of flame spread," says Takashi Kashwagi, a NIST materials research engineer serving on the RITSI team. RITSI data, he adds, will allow scientists to compare actual experimental results with computer simulations of fire behavior in near-weightless conditions. Detailed information on the RITSI experiment can be found on the NASA World Wide Web site via Internet at http://zeta.lerc.nasa.gov/exprr/ritsi/htm. In a related announcement, NASA has chosen NIST mechanical engineer Gregory T. Lineris to serve as a payload specialist aboard the Microgravity Science Lab shuttle mission (STS-83) scheduled for March 1997. He will conduct experiments in
fluid physics, combustion science and materials science during the seven-day flight.

Contact: John Blair, 301-975-4261

NIST HELPS POWER GRIDS MAKE "LIGHTNING SAVES"

A NIST technique has been incorporated into the latest version of an electrical standard used to test the ability of electric power grid high-voltage equipment to survive lightning strikes. Now a part of IEEE Standard 4-1995, "Standard Techniques for High-Voltage Testing," the technique improves the measurement of specific high-voltage impulse waveforms that simulate lightning. Such test waveforms subject the equipment to up to 10 times its normal operating voltage. To certify that power grid equipment is lightning-proof, engineers must evaluate the strength of the waveform. They use a "high-voltage divider" device to scale the voltage down to levels that can be measured. However the process can produce a distorted reading. The NIST technique improves the measurement process by enabling testers to mathematically estimate the distortion. The formulation offers an easy way to compare the input to the distorted output. Using the NIST technique, engineers no longer need a second divider to serve as a reference. The check can be done quickly at low voltage with a digital recorder to measure the response waveform and a personal computer to perform the calculations. Further, the test operator can see the distortion introduced by the divider by comparing the graphics of the input waveform and the calculated output. For more information, contact Gerald J. Fitzpatrick, B344 Metrology Bldg., NIST, Gaithersburg, MD, 20899-0001, 301-975-2737, e-mail: fitzpa@eepl.nist.gov.

SOFTWARE REDUCES TOUCH PROBE ERRORS IN COORDINATE MACHINES

A NIST computer model that compensates for a common source of error in coordinate measuring machines promises to greatly increase manufacturer's ability to accurately check the shape and dimensions of products. The new SuperFit software corrects "probe-lobing" errors, a chronic and relatively large source of measurement uncertainty in 98 percent of some 30,000 CMMs in U.S. factories and laboratories. Such errors stem from small variations in the performance of touch trigger probes and depend on the angle that the probe approaches a part being measured. When programmed with data gathered during a simple test, the software anticipates and then compensates for probe-lobing errors, reducing them by as much as 90 percent. Today, CMM users must pay a premium to eliminate the measurement uncertainty caused by probe-lobing errors. They can purchase CMMs with specialized probes that are as much as 10 times more expensive than the touch-trigger variety, placing them beyond the budgets of many CMM users. The NIST software could erase much of the tradeoff between price and accuracy. Several U.S. CMM manufacturers are now evaluating the software. Working with the NIST team, they are determining whether the model meets the specialized requirements of their particular products and whether refinements and adaptations are necessary. One CMM maker already has decided to refine and integrate the NIST error-compensation technology into future products. For more information, contact Steven Phillips, B133 Metrology Bldg., NIST, Gaithersburg, MD, 20899-0001, 301-975-3565.

PAPER SHOWS FIBER HEALTHY FOR COMMERCIAL SENSORS

The Faraday effect—whereby the plane of polarization of a light beam is rotated by a magnetic field—has been used as a non-electrical tool for measuring magnetic fields and electric currents for over 100 years. However, most of this measurement work has been in scientific laboratories. Because of recent advances in technology, current sensors utilizing optical fibers are being developed that meet the accuracy and durability needs of a large commercial sector, the electric power industry. The route to commercial success has been difficult; only within the last few years have significant numbers of optical current sensors been placed in service. A new paper from NIST discusses the fundamentals and problems of fiber current sensors, and should be helpful to those interested in applications of this technology. The paper describes the latest commercial developments and goes into detail on current research efforts to reduce sensor costs, increase accuracy, improve immunity to vibration, and create more rugged devices. Among topics discussed are improved techniques for removing fiber birefringence, low stress-optic coefficient fibers and compensation techniques. For a copy of paper no. 696, contact Sarabeth Harris, Div. 104, NIST, Boulder, CO, 80303-3328, 303-497-3237, e-mail: sarabeth@micf.nist.gov.

STUDY FINDS ATP ACCELERATES U.S. INNOVATION

The largest and most thorough study of the Commerce Department's Advanced Technology Program to date found that the ATP is succeeding in its near-term goal of fostering and accelerating the development of promising, but high-risk, enabling technologies by U.S. industry. The study summarizes the results of a survey of 125 companies and non-profit organizations participating in ATP projects awarded during the first three years of the program. The survey was conducted by Silber and Associates, an independent research firm. Seventy percent of the companies interviewed reported that there was little or no chance that they would have pursued the technology now under development without support from the ATP.

Of the balance, 90 percent said that if they had gone ahead with the research without the ATP, they would have done so with significantly lower goals and/or at a significantly slower pace. "We would have been much slower, probably three years out," commented one respondent, "which in this industry is forever." Among other findings: seven out of 10 participants reported that the ATP had enabled them to shorten the development cycle by two years or more; and eight out of 10 reported that the ATP had fostered the development of new technologies that will enable higher quality, higher performance products. The program also demonstrated its ability to promote collaborative research. Copies of the full study are available by request to 301-975-4332.

MAIL LIST NOW ON-LINE FOR MICROWAVE METROLOGY

If you're hooked up to the Internet and have questions regarding the measurement of microwave quantities, then NIST wants to hear from you. NIST's Electromagnetic Fields Division in Boulder, CO, has set up an electronic mailing list as an open forum for discussion on technical issues and problems regarding microwave metrology. NIST hopes the link will serve industry as a useful source of contacts and information, giving benchtop technicians
and engineers a place to ask questions and share their expertise. There is no cost for subscribing. To subscribe to the service, simply send an e-mail to: majordomo@central.bldrdoc.gov. The body of the message should read: subscribe mwave-news(your e-mail address). To cancel the service, substitute the command “unsubscribe” in place of the command “subscribe.” To get help or find out more information about the list server, send an e-mail to the same address with the word “help” in the body of the message. Once subscribed, one simply sends mail to the address to post a message to all the members on the list. If you prefer to talk by voice to some one about this service, call J. Wayde Allen at 303-497-5871.

LESS WAVER REAL ESTATE NEEDED TO MEASURE MMICs

Monolithic microwave integrated circuits, or MMIC, microelectronic chips becoming more commercially important for applications such as wireless communications and smart transportation systems. However they pose a challenge for those wanting to accurately characterize their microwave performance. A new method for calibrating measurements on MMICs has been developed by two NIST researchers that greatly reduces the amount of wafer space needed, yet has no significant loss in accuracy, when compared to previous measurement methods. Derived by Dylan Williams and Roger Marks of NIST’s Electromagnetic Fields Division, the system is applicable to a wide variety of MMICs fabricated with both co-planar waveguide and microstrip transmission lines. However, the method cannot be used to characterize a MMIC’s entire microwave performance because it only gives accurate results at high frequencies and not low. For details, contact Robert Judish, Div. 813.06, NIST, Boulder, CO, 80303-3328, 303-497-3380, e-mail: judish@boulder.nist.gov.

NIST DEVELOPED TUTORIAL ON MICROELECTRONIC PACKAGING MEASUREMENTS ATTRACTS INDUSTRY INTEREST

As the microelectronic industry continues to struggle with performance constraints resulting from the packaging that connects integrated circuits with computer and telecommunications systems, engineers are increasingly realizing the need for accurate electrical measurement and modeling tools. In a survey conducted at last year’s IEEE Topical Meeting on Electrical Performance of Electronic Packaging, the premier forum for discussion of these topics, participants indicated a strong interest in tutorial short courses, particularly on measurements.

In response, Roger Marks of the EM Fields Division developed a half-day course entitled, “Understanding, Performing, and Applying High-Frequency Electrical Package Measurements,” held in conjunction with the recent Fourth Annual IEEE Topical Meeting on Electrical Performance of Electronic Packaging, the premier forum for discussion of these topics, participants indicated a strong interest in tutorial short courses, particularly on measurements.

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Contact, Robert Judish 303-497-3380

LENS DRAWS NANODOTS ON SILICON

Physicists at NIST like to think small. Their newest creation—an array of metallic nanodots—is among the smallest fabricated objects on earth. Each nanodot is about 80 nanometers (80 billionths of a meter) wide. That’s about one one-thousandth of the diameter of a human hair. Scientists say the technology used to make the nanodots could be adapted to draw more complex patterns for integrated circuits on silicon chips. Once developed, such a method might provide a way to pattern circuits with line widths as much as 10 times thinner than those in current computer chips. To make the chromium nanodots, a group of NIST physicists modified a technique they devised two years ago to draw a row of nanolines on silicon. In that first experiment, they used a laser wave to guide chromium atoms to the surface in rows spaced 213 nanometers apart, exactly half the length of the laser wave. Two perpendicular laser waves focused chromium atoms into evenly spaced dots in the most recent experiments. Since the distance between the dots is determined by laser wavelength, which is known with very high accuracy, the nanodot arrays also could serve as an atomic ruler for instruments such as atomic-force microscopes. For more information, contact: Jabez McClelland, B206 Metrology Bldg., Gaithersburg, MD, 20899-0001, 301-975-3721, e-mail: jabez@epg.nist.gov.

JAPAN AND CHINA SUPPORT NIST’S APPROACH TO UNIFYING THE INTERNATIONAL ROCKWELL C HARDNESS SCALES

MEL’s Jun-Feng Song was invited to visit the National Research Institute of Metrology (NRLM) in Tsukuba, Japan, where he presented technical talks entitled, “Surface Finish and Microform Calibrations at NIST,” and “A Metrology Approach to Unifying Rockwell C Hardness Scales.” Song performed surface and hardness comparison tests and conducted discussions on the metrology approach to unifying the international Rockwell hardness scales. Song also visited the National Institute of Metrology (NIM) in Beijing, China, where he presented identical talks, performed similar measurements, and held discussions. From these discussions, it was learned that both NRLM and NIM researchers support the NIST metrology approach and want to cooperate with NIST to establish their own metrology-based Rockwell hardness system. As the first step to determine whether the small difference between a NRLM and NIST IDenter is systematic, five of the best Japanese national indenters were brought to NIST for geometric measurement and hardness tests.

Rockwell C Hardness (HRC) standard is one of the most important industrial standards. Since the 1980s, the EC countries unified their HRC scales. With the development of ISO 9000 standards, the unified EC scale is forming a challenge to the HRC tests performed in other countries, including the United States. Because the EC approach was based on performance comparisons, the unified EC scale still may exhibit an unknown offset from the correct scale and may not have metrology traceability and reproducibility.

(Continued on page 47)
VIMTA LABS LIMITED

Delegate : Dr. S.P. VASIREDDI
Phone : +91 (40) 624141
Fax : +91 (40) 623657

VITMA LABS LIMITED is a multi-disciplinary Independent Quality Assurance Laboratory undertaking Contract Testing for Product Certification, as well as Consultancy and Research.

VIMTA is today the only laboratory in India certified under ISO/IEC guide 25, ISO 9002.

The 40,000 sq.ft. scientifically designed laboratory structure is located in a prime, specially-built green field site at Hyderabad, India.

MISSION:

• Offering matchless service in Testing, Analysis and Consultancy to National/International Standards.

• Providing total customer satisfaction through quality service, time frame compliances and ensuring confidentiality of reports/findings.

• Becoming an international centre for excellence in its field.

SERVICES:

Six divisions form the core of the Company's operations in the fields of Testing/Analysis, Consultancy and Research:

Vimta has the capabilities of analysing and certifying a wide range of Industrial and Consumer Products which include Drugs, Chemicals, Ores, Foods, Oils, Engineering and Building Materials, etc. besides assignments in the field of Environment, Toxicology, Pesticide Residue Analysis and Bioavailability/Bioequivalence studies.

The company is also in the process of setting up an independent facility for calibration services.

CERTIFICATION:

• ISO/IEC Guide 25
• Department of Science & Technology-Govt. of India.

ACCREDITATIONS/ASSOCIATIONS:

NATIONAL


INTERNATIONAL

ADB, ILO, WHO, EEC, WATTRO, ASTM, ASM (INTERNATIONAL)

MANPOWER:

130 professionals comprising of 80 Scientists and Engineers including 18 Doctorates from varying disciplines - Chemicals, Civils, Electrical, Mechanical, Electronics, Environmental Engineering, Geology, Hydrogeology, Minerology, Environmental, Chemistry, Metallurgy, Pharmaceutical Chemistry, Pharmacology, Microbiology, Toxicology & Computer Sciences.

GLOBAL OPERATIONS:

Plans are being made to globalise its operations in areas of Quality Certifications for International markets, Undertaking Contract Research Assignments, Environmental Assignments and conducting Training Programmes.
CORM
Dr. Thomas J Huttemann, Jr., Liaison Delegate

The CORM SIXTH REPORT is the sixth in a series of documents produced by the Council of Optical Radiation Measurements (CORM) on Pressing Problems and Projected National Needs in Optical Radiation Measurements. The report contains three categories of needs with information drawn from CORM members and eight additional organizations/societies working in the field of optical radiation measurements. The CORM SIXTH REPORT contains the following proposals:

<table>
<thead>
<tr>
<th>Proposal No.</th>
<th>Priority</th>
<th>Proposal Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>1</td>
<td>Accreditation for Optical Radiation Measurements</td>
</tr>
<tr>
<td>O-1</td>
<td>1</td>
<td>New Standards of Regular and Diffuse Transmittance</td>
</tr>
<tr>
<td>O-2</td>
<td>1</td>
<td>Colored Standards Reference Materials</td>
</tr>
<tr>
<td>O-3</td>
<td>1</td>
<td>The Measurement of Fluorescence</td>
</tr>
<tr>
<td>O-4</td>
<td>1</td>
<td>New Standards for BRDF and BTDF</td>
</tr>
<tr>
<td>O-5</td>
<td>2</td>
<td>Measurement of Retroreflection</td>
</tr>
<tr>
<td>O-6</td>
<td>2</td>
<td>Measurement of Appearance</td>
</tr>
<tr>
<td>O-7</td>
<td>2</td>
<td>Effect Material Standard Reference Material</td>
</tr>
<tr>
<td>O-8</td>
<td>2</td>
<td>Specular Reflectance</td>
</tr>
<tr>
<td>R-1</td>
<td>1</td>
<td>Detector Based Radiometry</td>
</tr>
<tr>
<td>R-2</td>
<td>1</td>
<td>Radiometry: Sources and Detectors</td>
</tr>
<tr>
<td>R-3</td>
<td>1</td>
<td>Methodology: Photometry and Radiometry</td>
</tr>
<tr>
<td>R-4</td>
<td>2</td>
<td>Colorimetric Measurement of Displays</td>
</tr>
<tr>
<td>R-5</td>
<td>2</td>
<td>Photometry: Improved Measurement Capability</td>
</tr>
<tr>
<td>R-6</td>
<td>2</td>
<td>Improved Spectroradiometric Instrumentation</td>
</tr>
</tbody>
</table>

Each prioritized need or problem is described along with who should accomplish the work and who will benefit from the solution. The importance of the proposed work with regard to the impact on U.S. industry, trade, defense and other appropriate national policies are also reviewed for each need and/or proposal.

ASTM
Peter Unger, Liaison Delegate

At its meeting of 4-6 December 1995, ASTM Committee E-36 developed an expanded work plan under its new scope and revised title Conformity Assessment. The new structure covers all areas of conformity assessment accreditation including quality system registration, product certification and personnel certification. E-36 is now in a position to respond on all aspects of conformity assessment issues, both nationally and internationally and develop U.S. positions on ISO Guides developed by CASCO, the ISO Committee on Conformity Assessment.

David F Rundle, Associate Director for Global Standards and Approval Programs of AMP Inc., agreed to chair the new sub-committee on registration/certification bodies. Five task groups were formed to address standards for registration bodies, certification bodies, supplier’s self declaration, supplier audit confirmation and personnel certification.

The revision of the E1301 guide on proficiency testing has been improved as of the end of 1995.

A2LA
John Locke, Liaison Delegate

Laboratory Accreditation Working Group (LAWG) sponsored an Open Forum on 13 October 1995, to discuss cooperation among U.S.-based accreditation bodies. A2LA is a member of the Steering Committee of LAWG which is co-sponsored by ANSI, ACIL, and NIST. The Steering Committee has been meeting periodically since August 1994, when LAWG was formed. The interest in a single system for recognizing existing laboratory accreditation systems came about because of the multiplicity of Accreditation bodies now in existence and the user's needs.

The LAWG vision is a U.S. laboratory accreditation system that includes a cooperative relationship among the public and private sectors of the laboratory’s competence.

For the testing laboratory, a single accreditation in a given field of testing, with worldwide recognition of the laboratory’s competence.

For the user, a test performed once, with worldwide acceptance.

In this vision, accreditation based on uniform criteria is intended to assure that a laboratory is qualified to provide data of consistent quality.

Accrediting bodies from 50 countries and representatives from over a dozen international professional organizations have been meeting since 1977 to harmonize laboratory accreditation requirements so that data from accredited laboratories will be accepted worldwide. This series of meetings, sponsored every two years by bodies in different countries, is known as the International Laboratory Accreditation Conference (ILAC).

ILAC initially developed ISO/IEC Guide 25 for assessing laboratories as well as ISO/IEC Guide 58 for assessing laboratory accreditation systems. Since ILAC is an informal group, it had no mechanism to publish these standards so the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) agreed to accept these draft standards and publish them under their procedures.

With the availability of standards for the operations of accreditation systems, the next step was to develop procedures for the mutual recognition among bodies using and conforming to these standards. ILAC has continued to develop standards needed for establishing cooperation at the international level. The 1994 ILAC Conference published in its proceedings a document entitled:

Guidelines for establishment and Review of Mutual Recognition Agreements (ILAC Committee Papers, ILAC 94 held on 17-21st
October, 1994, and published by the Hong Kong Laboratory Accreditation Scheme, HOKLAS).

A2LA closes 1995 with 774 accredited laboratories 6 registered reference materials suppliers, and 5 laboratories registered to ISO 9001 or 9002. Registered laboratories must also be accredited to ISO Guide 25. Although the requirements are similar, Guide 25 includes more emphasis on technical competence and 9000 more on quality systems. A2LA believes that Guide 25 is all that should be needed for testing and calibration laboratories, but some laboratory customers demand ISO 9000 registrations and A2LA provides that service as needed. A2LA registration program was accredited by the Registration Accreditation Board (RAB) on the first of December. In the area of laboratory accreditation, mutual recognition agreements have been updated as needed and now exist with NATA, Australia, HOLKAS, Hong Kong, TELARC, New Zealand, SCC, Canada, and with NSLAP, the U.S. Navy. An agreement is in final phases of development with SINGLAS, Singapore. EAL has sent word that they wish to pursue an agreement. They will await action of the Asia Pacific Laboratory Accreditation Cooperation (APLAC) which is meeting on February 1-2 to put in place a mutual recognition agreement process which could be implemented in 1996.


Secondary calibration laboratories, to be accredited by A2LA, may use an estimating factor that is four times the reference standard uncertainty until June 30, 1997. This estimating factor for M&TE laboratories will be accepted after the June 30, 1997 date, provided that an additional estimate is included for nonenvironmental conditions at the location of the M&TE equipment.

A2LA accredited testing laboratories are to use this policy in evaluating the calibration laboratories they use. In order for the testing laboratories to retain their accreditation for test methods on their scope, testing laboratories will be required to use accredited calibration laboratories meeting this policy by June 30, 1997, whenever traceable calibrations are appropriate.

Calibration laboratory accreditations by A2LA and NIST/NVLAP in the United States will be accepted as will accreditations performed by an accreditation system included in the European Cooperation for Accreditation of Laboratories (EAL) Mutual Recognition Agreement (MRA) and the Asia Pacific Laboratory Accreditation Cooperation (APLAC) MRA.

Calibration laboratories shall provide a certificate or report of calibration including all information identified in clause 13.2 of ANSI/NCSL Z540.1-1994 (ISO/IEC Guide 25). Actual data on the “as found” condition of instruments to be calibrated needed to be recorded and reported to the user laboratory, where it is determined that the instrument is outside of the manufacturer’s specifications. Data on all calibrations should be reported to the laboratory as of June 30, 1996, so they will be in a position to consider the calibration intervals for the instrument. Certificates or reports shall include stated measurement results and associated uncertainties, and the source of traceability (i.e., national or international laboratory or intrinsic standard).

All laboratories may use, as a basis for their consideration, the A2LA paper, “A2LA Policy on the Expression of Uncertainty and Traceability in Measurement for Calibrations,” draft dated October 21, 1995. This paper is based on NAMAS NIS 3003, Edition 8, “the Expression of Uncertainty and Confidence in Measurements for Calibrations,” dated May 1995, NAMAS Executive, National Physical Laboratory, Teddington, Middlesex TW11 0LW, ENGLAND which is a more complete reference of the procedures described.

EUROPEAN COOPERATION FOR ACCREDITATION OF LABORATORIES (EAL)

Graham Cameron, Liaison Delegate

The writer attended the EAL General Assembly as a representative of the NACC Committee. This report provides an overview of:

1) EAL activities
2) Current and potential agreements with Third Countries and regions
3) The role of the European Organization for Testing and Certification
4) Other developments

Background

Two organization existed in Europe, the Western European Calibration Cooperation (WECC), and the Western European Laboratory Accreditation Cooperation (WELAC). Their members were the nationally-recognized laboratory accreditation bodies for calibration and testing. I acted as the NCSL Liaison Delegate to WECC.

The European Organization for Testing and Certification (ETC) was established in April 1990, under a Memorandum of Understanding (MOU) of the European Commission (EC), the European Free Trade Association (EFTA), and the European Standards Bodies CEN and CENELEC, to constitute the focal point for Europe for all issues related to conformity assessment.

On May 5, 1994, WECC and WELAC merged to become the European Cooperation for Accreditation of Laboratories (EAL), an Agreement Group of the European Organization for Testing and Certification whose member organizations are currently responsible for the accreditation of some 1200 calibration laboratories and some 3300 testing laboratories, under a Multilateral Agreement (MLA). EAL is the focal point for laboratory accreditation coordination in Europe.

The establishment of the North American Cooperation (NACC) Memorandum of Understanding in April 4, 1994, created a structure, the NACC Committee, to bring about collaboration in the field of calibration laboratory accreditation.

Status of EAL Agreements

There are twelve signatories to the EAL MLA, which governs both calibration and testing laboratory accreditation, namely: Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland and the United Kingdom.
The calibration laboratory accreditation service of South Africa was recognized by Europe in 1994; the request for recognition of its testing service was submitted to EAL in May 1995.

The European Commission's offer to establish agreements, in the field of laboratory accreditation, with four Third Countries; Australia, Canada, New Zealand and the United States of America, (and other possible arrangements, of which I am not aware), has resulted in:

1) agreements with —
   a) Australia, NATA, firstly in testing and secondly in calibration. (Finalization of the agreement covering calibration was announced during the General Assembly).
   b) New Zealand, TELARC (testing)
   c) Hong Kong, HOKLAS (testing)
2) a pre-evaluation visit to NVLAP (May 1995)
3) a short visit to AL@A (May 1995)

Israel initiated a request for an agreement with Europe several years ago, which was repeated in May 1995. The Slovak Republic and Hungary became Associate Members of EAL on Nov 29, 1995.

North American Calibration Coordination—European Cooperation for Accreditation of Laboratory Matters

The character of EAL meetings changed a few years ago from a one day meeting attended by its members, followed by a one-day session open to others, to a two-day General Assembly open to its members and 3rd Countries with which it has an agreement, and single representatives from other identified organizations.

The NACC Committee is invited to attend as one of the other organizations which has been accorded observer status.

The NACC decided at its July 1995 meeting in Dallas, that it was extremely important to have a committee member attend EAL General Assemblies to establish a working communication pathway between NACC and EAL, since NACC documents were being modelled directly on the EAL publications.

NCSL Liaison

Liaison with EAL is accomplished by the writer through their President, Robert Kaarls of the Nederlands Meetinstituut (N!) in the Netherlands.

Attendees at NCSL 1996, Monterey, will have the opportunity to learn more about EAL and the many Conformity Assessment activities in Europe and NMI activities during a special session being developed by Dr. Menno Plantenga of NMI.

My Standards Council of Canada responsibilities and close working relationship with the national Research Council of Canada facilitates communication with EAL.

International Cooperation in Metrology

The main regional organizations operating at the national measurement laboratory and calibration laboratory accreditation levels are identified in the accompanying figure contributed by the National Research Council of Canada. This report deals only with EAL, NACC and APLAC.

European (EAL) — Asia-Pacific Cooperation (APLAC) Developments

Considerable effort is underway between EAL and Asia-Pacific Laboratory Accreditation Cooperation (APLAC) which would lead to the establishment of an agreement between the APLAC and EAL Multilateral Agreements.

Other areas of cooperation include: harmonization of existing documents, allocation of work on new documents, and sharing of international measurement intercomparison information.

A list of Full Members of APLAC is shown on the map.

Upcoming EAL General Assembly meeting:

June 13-14, 1996 Prague, Czech Republic

NRC-CNRC INMS REPORT
Gary Hysert, Liaison Delegate

CLAS Program Update

The Calibration Laboratory Assessment Service continues its steady development. The on-site assessments of four applicant laboratories has been completed and the process of measurement verification by artifact of the four laboratories is in progress. CLAS has also started the re-assessment of three of the accredited laboratories. Complete re-assessment of a laboratory's accredited measurement capabilities is normally carried out every three years. We are pleased to announce the latest accreditation—the Calibration Center of Fluke Electronics Canada in Mississauga was accredited by the Standards Council of Canada and certified by CLAS for specific measurements in electrical current, resistance and voltage.

INMS Mass Seminar

The Institute has scheduled a Mass Metrology seminar for May 13-15, 1996. This seminar is one of an on-going series of seminars presented by INMS concerning the measurement of basic physical quantities that are important to metrology. The mass seminar will treat key topics in the field in such a way as to be of immediate use to practitioners. The target audience is therefore the mass laboratory technician, physical and legal mass metrolo-
gists, and scientific and technical supervisors with a need to understand mass measurements. The final afternoon of the seminar will be spent in the INMS mass laboratory for a hands-on experience with some of the Institute’s comparators and programs and a look at the Canadian national prototypes of the kilogram.

All lectures will be held in the Kelvin Room of INMS, Bldg. M-36 on NRC’s Montreal Road campus in Ottawa. Enrollment is limited to 50 participants at a fee of $450.00. For information or technical details, contact: Dr. George Chapman 613-993-2351, e-mail: george.chapman@nrc.ca.

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INSTRUMENT SOCIETY OF AMERICA
Mike Suraci, Liaison Delegate

During the past quarter, there have been continuing communications with ISA headquarters staff. There is an effort ongoing to get coverage of our upcoming conference in Monterey advertised in their international publication, "InTech."

I have maintained an awareness with the ISA Executive Director of our continuing interest in having him attend an NCSL Board meeting to discuss paid positions with the NCSL Board.

ISA
42nd International Instrumentation Symposium

May 5-9, 1996
Catamaran Resort Hotel
San Diego, CA

Measurements and Sensors
Pressure, Flow, Temperature
Measurement Uncertainty
Metrology and Calibration
Blast and Shock
Force, Vibration and Strain

Data Systems
Data Acquisition and Processing
Telemetry Systems
Computer Applications
Real Time Systems

Advanced Systems and Sensor Technology
Electro-Optical Systems
Photonic Components and Systems

Plus, Short Courses, Tutorials and Workshops
Contact: Mr. Robert Evans, EG&G, Inc.
PO Box 1625 MS 2070
Idaho Falls, ID 83415-2070

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NCWM REPORT
Georgia Harris, Liaison Delegate

National Conference on Weights and Measures (NCWM) annual meeting is scheduled for July 14-18, 1996 in New Orleans, LA.

Contact 301-975-4004 and ask for Ann Turner for more information. Or call the NCWM FAX-on-demand service at 1-800-925-2453 and request document number 203.

The NCWM Interim meeting was held on January 21-25, 1996 in Fort Lauderdale, FL.

Summary of the NCWM Program Evaluation Work Group was given during the "Metrology on the Internet" session at the Measurement Science Conference, Jan 26, 1996. Five states (CT, NE, TN, TX and CA) are acting as the pilot weights and measures organizations to collect uniform data in a project designed to eventually allow data collection, analysis and dissemination from all 790 independent weights and measures jurisdictions in the country.

NIST hosted a Region 3 NCSL meeting on Mar 7, which is during the national "Weights and Measures Week." A tour was given through the Training and Demonstration Laboratory and an Office of Weights Measures spokesman presented a talk on Legal Metrology.

The NCWM FAX-on-demand system is working very well at facilitating quick responses to frequently-requested questions and materials from the Office of Weights and Measures. If you call the number in the first paragraph and request menu document 101, you will get the roadmap. "Commonly Requested Metrology Publications" is document 505, and it contains information on how to get NCCL RP-1, "Calibration Intervals, RP-7, "Facility Design," and the Z540-1-1994 Standard and Handbook (since they are often requested from our office). The NCSL order form for Z540-1-1994 and the NCSL application for membership could be added if desired.

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MEASUREMENT SCIENCE CONFERENCE
Chet Crane, Liaison Delegate

The 1996 Measurement Science Conference was concluded on Friday, January 26. All indicators point to a technical success.

The President opened the conference and introduced the Keynote speaker, Dr. Peter Heydemann, Director of Technology Services at NIST. Dr. Heydemann’s topic, “A Challenge for the next 25 Years: STandards in Trade,” was on target and well received.

A highlight of the Conference was the Andrew J. Woodington Award, presented this year to long-time supporter of the measurement sciences, Mr. Phillip Painchaud.

The MSC presented four scholarships this year to students who are studying measurements related or product-assurance related courses at either California State University, Dominguez Hills or Cal Poly at Pomona. The awards this year went to:

Michael R. Hinz—CSUDH
David D. Snyder—Cal Poly
Rhonda Marillo—CSUDH
Michael D. Falk—CSUDH

The Alger Lance Best Paper Award was presented to Mr. Randall Schoonover for his paper entitled, “An Efficient Method for Measuring the Density (or Volume) of Similar Objects.”
You are invited to attend the 42nd Annual Technical Meeting and Exposition (ATM) of the Institute of Environmental Sciences, May 12-16, 1996, at the Radisson Towers Hotel in Orlando, FL.

The theme for this year’s conference is, “Expanding Our Technical Excellence Through Education.”

The Annual Technical Meeting and Exposition will include more than 100 exhibit booths, as well as technical sessions in the area of contamination control; design, test and evaluation; and product reliability. For the first time, special sessions will be held on issues pertinent to the Health Care Industry—Biopharm and Medical Devices. Also features will be Fundamental courses, Tutorials, and the International Symposium on Mini-Environments.

NCSL CONGRATULATES ISA ON THEIR 50TH ANNIVERSARY

Bill Simmons, Past President of NCSL, pinch-hit for the NCSL President and presented a plaque from NCSL to the ISA President, Gerald Wilbanks, congratulating ISA on their 50th Anniversary. The plaque was presented at the ISA keynote address session on October 2, 1995. Several other world organizations based outside the U.S. presented plaques and certificates to ISA at this session, however the NCSL was only U.S. based organization that acknowledged ISA’s 50th Anniversary.

NIST News
(Continued from page 41)

At the ISO/TC164/SC3 meeting, NIST proposed a metrology approach to unify the international Rockwell hardness scales. The SC3 issued a document to establish a working group to investigate the approach to unify the international Rockwell hardness standards.

Contact, Jun-Feng Song, 301-975-3799

LABORATORY ACCREDITATION FORUM

ACIL (formerly American Council of Independent Laboratories), American National Standards Institute (ANSI), and the NIST Office of Standards Services co-sponsored an open forum for discussion of issues in laboratory accreditation at NIST on Oct 13, 1995. The forum provided an opportunity to discuss achieving greater compatibility, coordination, and mutual recognition of competent laboratory accreditations at the nation and international levels; the problems of multiple and/or duplicate accreditations that result from overlapping responsibilities of governments and industry; and assuring reciprocity among accreditation programs.

Laboratories, accreditors, manufacturers, the National Environmental Laboratory Accreditation Conference, and government representatives, both federal and state, presented their views on the cost of multiple accreditations; conflicting requirements of users of accreditation; special programs tailored to narrow customer or supplier bases; non-uniformity of requirements and lack of reciprocity; international trade implications; and other pertinent factors. A panel discussion and open exchange of ideas explored concepts for future collaboration that may lead to “one-stop-shopping” in laboratory accreditation. All participants were urged to submit ideas for inclusion in the proceedings that will be issued later this year.

Contact, Belinda Collins, 301-975-4000
The New England region of the NCSL held its fall meeting on November 1, 1995 at the Digital Equipment Corp in Hudson, MA.

Attendance was excellent with many new faces in the group. It is apparent that the regions membership is beginning to include many of our local genetic and bio-research companies.

The meeting was opened by Region 1 Coordinator Steve Griffin with a review of the recent board of directors meeting and a Z-540 update.

The members enjoyed the quality presentations of the four speakers.

Paul Tuller, Product Manager, Machine Calibration Products, Federal Products Corporation made an interesting presentation on Gage Blocks and the Laser Gage Block Comparator. Paul reviewed the history of gage block calibration and led up to today's state-of-the-art products.

Milt Towne of Lockheed Sanders Corporation presented a timely paper concerning Self-Directed Calibration Teams. Milt reviewed how Lockheed Sanders flattened their organization and changed the way groups are managed. Many companies are looking for ways to reduce overhead. Self-directed groups have good points as well as bad. Milt reviewed the pros and cons of this type of a structure as well a tips to make it successful.

Frank Page, Sales Manager, Pressure Products Group, Consolidated Controls was the next speaker. He made a nice presentation regarding secondary standards. Frank covered the tools and techniques for pressure measurement.

The final speaker was Jeff Grossman of DH Instruments / Cal Technix. Jeff discussed and demonstrated high accuracy portable calibration standards for low mass flow.

After the presentations a tour was made of the Digital Equipment calibration lab. This lab performs calibrations for both internal and external customers. It is well equipped and staffed with high-quality capable technicians. Those attending the meeting enjoyed seeing the equipment and observing how the lab operated. The lab uses many of the products covered in the presentations. The tour gave everyone a chance to see them in operation.

We were lucky to have lots of good raffle items. Names were drawn to choose the winners.

Thanks to Digital Equipment Company, the meeting was successful and very comfortable.

Plans are being made now for a late April / early May meeting. As always, suggestions for speakers will be appreciated.
Sept. 25, 1995  
Community College of Aurora  
Aurora, CO  
Greg Burnett  
Boulder/Denver Section Coordinator

The Fall meeting was hosted by Mr. Tom Kimbrell, Director of Metrology, Community College of Aurora.

The meeting presentations were as follows:

- Dr. Larry Carter, President, Community College of Aurora, made the opening presentation — with an introduction to CCA, and its commitment to the community and region.

- Wilbur Anson, NCSL Business Manager, gave an informative report on the current status and activities of NCSL, possible effects upon our technology programs (including NIST) as a result of the proposed Dismantlement Acts before Congress, and ANSI/NCSL Z-540.

- Ronnie Eubanks, Halliburton Energy Services, gave an up-beat presentation beginning with the history of NCSL and geography of Section 6. He discussed the advantages of NCSL membership, attributing some personal metrology/career advances to NCSL (networking, seminars, etc.). Ronnie presented updates on NVLAP and AZLA. He mentioned a handy acronym list and a bibliography of metrology papers — both available from NCSL (contact Wilbur). Ronnie called for topics and papers, and concluded: “If you’re doing something new, share it with us!”

- Chuck Hunter, Somatogen, presented: “A Novel Vessel Load Cell Calibration Technique.” Chuck discussed how three Somatogen employees worked as a team to overcome a difficult measurement challenge. Brainstorming together, they formed a new paradigm to develop an intriguing measurement solution.

- Kevin Abercrombie, DynCorp of Colorado, gave an interesting presentation on the history and current status at the Rocky Flats Environmental Technology Center (formerly the Rocky Flats Nuclear Weapons Plant). Kevin discussed: “The New Era: Making it Safe & Cleaning it up.”

- Tom Kimbrell, Community College of Aurora, discussed the many advantages and challenges facing the new Metrology Program at CCA. Topics included: accountability, partnerships with community, NSF grants, curriculum for associate or applied science degrees, and an articulation agreement with Eagle Crest High School. Tom emphasized the concept of: entire technology center, including metrology. Best quote of the day from Tom Kimbrell: "Metrology ought to be the center-piece of all manufacturing."


- Greg Burnett, Boulder/Denver Section Coordinator, held a drawing for door prizes, and set an agenda for the next meeting.

The next meeting of the Boulder/Denver Section will be on Wed, March 13, 1996, tentatively at Lockheed Martin (Denver).

Tom Kimbrell and Don Goodwin concluded the day with a tour of the Community College of Aurora Metrology School and Lab.

Attendees:

Greg Burnett  
Hewlett-Packard
Louis Taylor  
DynCorp of Colorado
Ronnie Eubanks  
Halliburton Energy Services
Mark Fritz  
Denver Instrument
John Chapman  
Hewlett-Packard
Kevin Abercrombie  
DynCorp of Colorado
Mick Cermak  
Somatogen
Dean Kallis  
Lockheed Martin
Jim Hahn  
DynCorp of Colorado
Ted Allison  
Hewlett-Packard
Bill Young  
State of Colorado
Bill Moses  
Somatogen
Dave Hyde  
State of Colorado
Don Miller  
Coors Ceramics
Chuck Hunter  
Somatogen
Dave Vamer  
Lockheed Martin
Don Goodwin  
HEAT
Tom Kimbrell  
Community College of Aurora
Diane Wise  
State of Colorado
Diane Patterson  
Community College of Aurora
Michael Maxwell  
NCAR
Steve Semmer  
NCAR
Cathy Jirak  
Tech/Aid
Louis Reimer  
Tech/Aid
Elizabeth Velez  
Community College of Aurora
Ron Beville  
Rocket Components
John Portman  
NCSL
Wilbur Anson  
Rocket Components
Bill Morrison  
Hewlett-Packard
Joe Hunter  
Hewlett-Packard
Richard Robinson  
Hewlett-Packard
Susan Popham  
Community College of Aurora
Larry Carter  
State of Colorado
David Wallace  

- Bill Young, Chief Metrologist, State of Colorado, discussed legal metrology, the Southwestern Assurance Program (SWAP), NIST HDBK 143 (being re-written to encompass Z540), NIST HDBK 145 (SOP1, SOP2, etc.), and the National Conference of Weights and Measures (NCWM).

- Diane Wise, Metrologist, State of Colorado, gave us an excellent 35mm slide presentation: "A Slide Tour of the Colorado Measurement Standards Lab."

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Mick Cermak  
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Dean Kallis  
Lockheed Martin
Jim Hahn  
DynCorp of Colorado
Ted Allison  
Hewlett-Packard
Bill Young  
State of Colorado
Bill Moses  
Somatogen
Dave Hyde  
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Diane Patterson  
Community College of Aurora
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NCAR
Steve Semmer  
NCAR
Cathy Jirak  
Tech/Aid
Louis Reimer  
Tech/Aid
Elizabeth Velez  
Community College of Aurora
Ron Beville  
Rocket Components
John Portman  
NCSL
Wilbur Anson  
Rocket Components
Bill Morrison  
Hewlett-Packard
Joe Hunter  
Hewlett-Packard
Richard Robinson  
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Regional Reports

Feb. 7, 1996
3M Corp Austin Center
Austin, TX
Jim Patterson
South Texas Section Coordinator

The South Texas Section meeting was held on February 7, 1996, at the 3M Corporation Austin Center located in Austin, Texas. Binh Duong of the 3M Metrology Laboratory coordinated the accommodations. Forty-two people were in attendance: one instrument manufacturer/user, six manufacturer representatives/salespersons, one consultant, and 34 instrument users.

Jim Patterson, Section Coordinator (Southwest Research Institute, San Antonio, TX) opened the meeting with introductions and presented the meeting agenda. The welcome and introductions to 3M Corporation Austin Center was provided by Mr. Daniel Garza II, Manager, Engineering Services.

Jim Patterson presented NCSL news and future events planned. All in attendance were asked to check the NCSL roster.

Keith Scoggins, Houston Lighting and Power, made a presentation on the "Automated Pressure Calibration System." The presentation covered an automated pressure system that has two components, an electronic multitrange digital pressure gage and user "friendly" software. The benefits of the system are lower cost and increased quality. In the future, Mr. Scoggins plans to replace manual valves with computer controlled valves.

Wayne Cummings, Fluke Corporation, presented a paper on the "Trends in the Calibration Laboratory." Mr. Cummings covered "out-sourcing" or subcontracting of calibration work, staff, and standards required to operate a modern day calibration facility.

Ron Smith, SIMCO, Johnson Space Center (JSC), NASA (Housto, TX), presented a paper on the Pilot Program they are conducting at JSC on complying with ISO 9001, ISO Guide 25 and ANSI/NCSL-Z540-1-1994. JSC's plan is to have the pilot program in place by March 1996, Center-wide by mid-1997, and to serving as model for all NASA Centers. The presentation included preparation of procedures, work instructions, and formats used in their documentation.

A round table discussion of current issues was held which lead to the subject of "LABORATORY ACCREDITATION" and the A2LA Liaison Report to the NCSL Board of Directors, dated 6 January 1996, which on Page 4, states "A2LA Board adopts a Revised Accreditation Policy. In order for the testing laboratories to retain their accreditation for test methods on their scope, testing laboratories will be required to use accredited calibration laboratories meeting this policy by June 30, 1997, where traceable calibrations are appropriate." The general feeling of those attending the meeting was that when accreditation first became a topic it was a good idea, but now the expense of obtaining accreditation has become a larger issue than the accreditation itself.

A tour of 3M facilities was conducted after the meeting. A buffet style lunch was furnished by 3M Corporation. NCSL thanks them for their hospitality.

The next South Section Meeting, Region 6, will be held on June 19, 1996 at the COMPAQ Computer Corp., Houston, Texas.

LIST OF ATTENDEES

- Nguy Lauv
- Luke Smith
- Carl Jantz
- Peter Stemmermann
- Bill Smith
- Bob Hunter
- Dave Sanders
- James Hayes
- Johnie Winter
- Jim Good
- Keith Scoggins
- John A Roof
- Marty Martinez
- Kevin Hale
- Jim Thiessen
- Trace Bell
- Ed Comes
- Bill Stone
- Tony O'Jeda
- Jimmie Espinoza
- Kyle Bateman
- Jim Greenwood
- Craig Lopp
- Steve Comery
- Pat Vanover
- Sam Clifford
- Wayne Cummings
- Pete Overstreet
- Steve Keong
- Dave Upton
- Don Grachanen
- Tim Kramer
- Mark Walker
- Robert Shiflett
- Greg Boyd
- Ron Smith
- Mario Sancz
- Daniel Garza II
- Binh Duong
- Skip King
- Mike Riggs
- TU Electric
- E-Systems
- 3M Corporation
- Rothe Dev Co.
- McDonnell Douglas
- Bob Hunter Assoc
- Oscilloscope Services
- Texas Instruments
- Fluke Corporation
- Motorola, Austin
- HLP, Wadsworth
- CFAN, San Marcos
- Texas Instruments
- Lockheed-Martin
- 3M Corporation
- SEMATECH, Austin
- TESCO-DYNORP
- TESCO-DYNORP, Ft Hood
- USAF, PME
- Interested Party
- AIREP Electronic
- SEMATECH
- ACUDATA
- Rule Products
- Rule Products
- Fluke Corporation
- Barrios Technology
- Mentor Corporation
- EMA, Houston
- Ruskca Instruments
- SIMCO, Richardson
- SIMCO, Austin
- SPCS, Cypress
- SIMCO/ISC/NASA
- SIMCO/ISC/NASA
- Formosa Plastics
- 3M Corporation
- 3M Corporation
- Mentor Corporation
- Data Marketing

Keith Scoggins of Houston Lighting and Power presented an automated pressure calibration system.

Jim Patterson turned out an impressive 42 people in their Austin venue.

Twenty people were in attendance at the Region 11, Chicago Section Fall meeting. Searle provided lunch and refreshments.

Tom Waltrich opened the meeting and introduced Kevin Machnics, the meeting host. Kevin welcomed everyone to Searle and made a brief presentation.

Our first speaker was Dave Walters of Commonwealth Edison. Dave’s presentation was entitled, “Accelerated Learning for Metrology.” Dave stressed that learning is multi-sensory. The education process must include other methods of knowledge transfer in addition to the traditional pure lecture format. Education needs to be interactive and stimulate students by using tools such as games, music and pictures. Benefits of using these techniques include faster learning, longer retention and easier recall.

The second speaker was Frank Wieszczek of Mettler Toledo. Frank gave a comprehensive presentation on Mass Metrology. Frank discussed the many variables that can affect mass measurement and presented ways to control them to improve weighing results.

Our final speaker was Dave Duff of A-Metrology-Z. Dave gave an excellent presentation on holding an effective meeting or giving a talk. Topics discussed included:

- Having a clear purpose
- Doing an audience analysis
- The five stages of presentation
- Considering the use of type of visuals
- Speaker guidelines

This information provided useful guidelines for preparing an interesting and effective talk in a minimal amount of time.

The day was ended with a tour of Searle.

I would like to thank everyone who attended the meeting for their interest and participation. Special thanks to Kevin Machnics and Searle for all the effort and outstanding hospitality.

Attendees:

- Frank Wieszczek, Mettler Toledo
- Lewis J.C. Grembla, Motorola
- Ken Kern, Siemens Medical Systems
- Angel Guma, S& C Electric
- Larry Azus, Fluke Corp
- Tom Waltrich, NutraSweet
- Andrew Slagel, JLW Instruments
- Kevin Machnics, Searle
- Doug Meckley, Searle
- Roger Miller, Searle
- Alok Shulka, Searle
- Dave Nemeth, Honeywell MicroSwitch
- Don Dedinas, Alliance Test Technology
- Gordon Birkelbaw, Honeywell MicroSwitch
- Gen Brinkmeier, Honeywell MicroSwitch
- Stan Chytla, NutraSweet
- Dave Duff, A-Metrology-Z
- Bob Geckie, Midwest Balance
- Shawn Clark, Inotek
- Dave Walters, ComEd

Regional Reports

Mar. 13, 1996
Searle
Skokie, IL
Tom Waltrich
Chicago Section Coordinator

INDIA REGION REPORT
J. S. Raju
India Regional Co-ordinator

REPORT FROM INDIA REGION FOR PERIOD DECEMBER 1995 - FEBRUARY 1996

Welcome

Mr. R. Basu, an officer at the Indian Administrative Service, 1964 batch, took over the reins of the Department of Electronics (DOE), Govt. of India as Secretary on January 19, 1996. Mr. Basu holds a Masters degree and has been the Director General of Doordarshan, India’s national television network and Additional Secretary to Govt. of India in the Ministry of Information & Broadcasting prior to the present assignment. As Chief Executive of Doordarshan, he was responsible for software, hardware,
programme development, network expansion and collaboration with other international networks.

**New NCSL Area Co-ordinator Appointed**

Mr. J. S. Raju has appointed Mr. A. K. Datta, Senior Director, Electronics Regional Test Laboratory (N) [ERTL (N)] New Delhi, as Area Co-ordinator for New Delhi area (1340). With this appointment, the NCSL activities and the NCSL membership is expected to increase from this area.

M/s. Bharat Heavy Electricals Ltd, Bhopal, Bureau of Indian Standards, New Delhi & Electronics Test & Development Centre (ETDC), Hyderabad have become members of NCSL. With this the NCSL membership strength in India has increased to twenty-four.

**Philips gets first EMC compliance registration**

The first EMC compliance registration under Standardisation Testing & Quality Certification (STQC) “EMC Certification” scheme has been awarded to M/s Philips India Ltd., (Luminaire Business Unit), Calcutta for their product — Electronic Ballast. This was tested to IEC, CISPR and EN standards. STQC has also organised witness testing by VDE experts at ERTL (N) to help India manufacturers to put CE mark on their products and also VDE mark.

**National Standards Authority of Ireland Signs MOU with STQC**

National Standards Authority of Ireland (NSAI) the prime certification Body in Ireland proposes to utilise STQC’s Testing and Certification expertise for assessing their clients in India. As part of a collaborative agreement, an MOU has been signed by NSAI and STQC. Per the MOU, STQC would perform testing and factory inspection on behalf of NSAI in India. This will help the Indian Industry to avail services locally for the purpose of getting certificate from Ireland authority.

**STQC Participates in CII Quality Summit**

The Confederation of Indian Industry (CII) organised their Annual Quality Summit at Bangalore, wherein National & International experts in the area of quality shared their experiences with participants and presented papers on state-of-the-art technology in Quality Management. As part of this event, J. S. Raju, Director General (STQC) & NCSL India Region co-ordinator was invited to speak on “An Indian Certification Board for Quality Management/Personnel - Indian Perspective”, during Indo-ECC session.

**Metrology Society of India Organises International Conference on Metrology**

Metrology Society of India (MSI) in collaboration with National Physical Laboratory (NPL), India; Physikalisch - Technische Bundesanstalt (PTB) Germany, Commonwealth Secretariat (MTSD) UK, STQC/DOE and several other international/national organisations has organised an international conference on Advances in Metrology & its Role in Quality Improvement and Global Trade at NPL Delhi on February 20-22, 1996.

Topics covered in the conference include Quality Management & Global trade, Standards, Calibration & Accreditation and Advances in Metrology. During the conference, Mr. Raju, NCSL India Region co-ordinator gave an invited talk on Training Requirements for Laboratory Accreditation Programme. Scientists from STQC labs (NCSL members) have also presented technical papers at the conference.

The conference was attended by more than 200 delegates from 25 countries and provided a common platform to Metrologists, executives, manufacturers, suppliers and users from both developed & the developing world to discuss topics of mutual interest. NCSL 1996 workshop & symposium flyers were distributed to the delegates along with NCSL membership application forms to facilitate interested participants to apply for membership.

**CIMET Training Workshop Organised for Developing Countries**

National Physical Laboratory, Delhi in collaboration with STQC directorate and STQC labs (NCSL members) organised the 4th training programme for the benefit of participants from developing countries under the auspices of Commonwealth India Metrology Centre (CIMET) during 5-23 February, 1996. The theme of the training programme was “Quality Assurance through Laboratory Accreditation”.

The programme was attended by 14 delegates from 11 countries. Apart from technical talks delivered by scientist from NPL, STQC and other organisations, participants also visited ERTL (N) laboratory and had discussions with the scientists of the lab on various subjects like Calibration, EMII/EMC, Laboratory Management etc.

The CIMET training programme has been well appreciated by the participants.
Annual STQC Lab Directors Meet

The 8th Annual STQC Lab Directors meet was held at ETDC Madras on 19-20 January, 1996. The theme for this year’s meet was “STQC - Vision 2000”. The meeting was inaugurated by Mr. N. Vittal, Chairman Public Enterprises Selection Board & former Secretary, Department of Electronics.

Mr. Rajith lighting the traditional lamp during the inauguration

N. Haribhaskar,IAS, Chief Secretary to Govt. of Tamilnadu was the chief guest. Mr. J. S. Raju, DG (STQC) welcomed the delegates to the meet and highlighted the importance of these annual meetings. Mr. Vittal, distributed certificates of appreciation to winning STQC labs for their outstanding performance during year 1994-95. The winning labs are:

ERTL (N) New Delhi ETDC Jaipur ETDC Indore ETDC Pune Certification Group of STQC HQ.

The meeting witnessed exchange of experiences between various labs, discussion on annual action plan, harmonisation of practices, methodologies and performance indicators to bring about uniformity and cohesiveness in the working of the organisation. The occasion of the meet was utilised to discuss ongoing activities of NCSL and future plans for increasing the membership, organising more seminars under the banner of NCSL, etc. The meeting was attended by NCSL members & others from STQC Dte and its labs.

Regional Reports

Seminar on Export Requirements for European Norms

A one day seminar was organised by ERTL (N), New Delhi (NCSL member & Delhi Area co-ordinator), on January 30, 1996 at Electronics Niketan, New Delhi and at Bangalore by ETDC Bangalore (NCSL member) on February 02, 1996. The seminar was on “Export of Electronics products to European Union - Requirements of European Norms”. J. S. Raju, DG (STQC) inaugurated the seminar at Delhi.

International Accreditation

ERTL (E) Calcutta (NCSL member), a lab under STQC, has recently received Federal Communication Commission (FCC) USA listing for their 10 meters Open Area Test Site (OATS) for conducting Radiated & AC line Conducted tests as per ANSI C63.4 - 1992 standard. ETDC Mohali, was the first STQC lab to receive FCC listing for their 10 meters OATS. Earlier Three STQC labs (all NCSL members), i.e., ERTL(N) N Delhi, ETDC Bangalore and ETDC Mohali have already been FCC listed for their 3 meter OATS.

Asia Pacific Metrology Programme

ERTL(N), Delhi will be participating in the Asia Pacific Metrology Programme (APMP) “Inter-comparison on EMC” co-ordinated by National Measurement Laboratory, Division of Applied Physics, CSIRO, Australia. The main activity is the calibration of Dipole Antenna at various frequencies. The objective of this programme is to add to the confidence in measurement capabilities and also to gain international acceptance.

BOMBAY AREA REPORT

Dr. (Mrs). Bhamiya Iyer Area Co-ordinator

Eco-Friendly Concept

The Textiles Committee, (NCSL member) under the Ministry of Textiles, Government of India, is the nodal agency for the dissemination of information on the use of safe chemicals/dyes among the Trade, Industry and Exporters in India and for promoting eco-friendly concept.

Exporters of Textiles to Germany have to comply with a new set of ISO 14000 standards on Life Cycle Assessment concerning the environment. These standards are now at drafting stage. Import of textile goods containing azo dyes which on cleavage of azo groups could release any harmful amine (twenty such amines have been identified as carcinogenic) is to be banned in Germany from 1st April, 1996.

A massive awareness programme has been launched by conducting seminars/workshops all over India during the last six months. These were attended by personnel from the top management level to workers at the floor level. A video film has also been prepared to create awareness about the eco-friendly concept amongst the industry and the consumers. Textiles Committee is actively involved in formulating the criteria/norms for the eco-parameters of textile goods.

Eco-parameters that need to be tested and the equipment needed for the tests have been identified. Training of personnel for eko-testing is being organised at various centres with Textiles Com-
Committee acting as nodal agency. A full fledged Eco-Laboratory is being set up at Bombay for the qualitative analysis of various toxic dyes and chemicals present on the textile goods, as per the relevant Eco-standards, with assistance from Germany. Further information regarding the above can be had from Director, CTL, Textiles Committee, Dr. Annie Besant Road, Worli, Bombay - 400 025.

Canadian Region Report
Les Peer
Region 12 Coordinator

On behalf of the members of the Canadian Region, I wish to thank our secretariat, our area coordinators and our committee persons of the Canadian National Measurement Requirements Committee for their support of our activities this past year, support which culminated in making 1995 a most successful year for NCSL in Canada.

Following is a summary of events past and present:

Present activities:

The Spring 96 regional meeting is set for May 16, 1996 at the National Research Council in Ottawa. An agenda was included with the proceedings of Fall 95 Symposium, mailed Dec 20. These proceeding which were 200 pages long were produced and mailed by Marilyn Ross to all attendees and all Canadian region member delegates. A copy has also been sent to Jeff Taylor, NCSL VP International Division, for his information and for forwarding to Wilbur Anson for inclusion in the proceedings archives.

Serious thoughts are being given to arranging for measurement training courses on May 15, the day preceding the spring meeting at NRC. Contact has been made with three companies; ASL for thermometry, TechnoLink/Ruska for pressure-crest weight tester calibration, and Interfax/Trumtime for time/frequency standards use and traceability. I have asked that the coordinators call me with their thoughts on this proposal so I can firm up plans with the companies.

After discussions with Ralph Bertermann, it seems that Ralph is most willing to take on the task of updating the NCSL/MSC conference proceedings database. In fact, he has already started it. Marilyn and I are seeing that he receives copies of and includes the papers presented at our Canadian meetings and symposia. We believe that this collection of papers is a valuable asset to NCSL. Frequently both new and prospective members ask us to present information on some aspect of metrology that we have recently presented at one of our meetings, but it is difficult to remember at which one. This database will be invaluable in answering that question. We understand that Wilbur will maintain proceeding and send copies to those requiring them.

With the Spring meeting agenda organized and the preliminary notice mailed, we have started to think of content for the Fall Symposium. We are again thinking of attaching a training day. Perhaps have Rolf Schumacher spend a day on uncertainty budgets?

The Canadian National Measurement REquirements committee's 1994/1995 survey has been successfully completed, now that Wayne Sampson has received the final report from Gary Hysert, head of Client Services at INMS in which Gary details the actions INMS have involved as a result of this survey. Wayne is to be congratulated for expediting this survey through to its completion. David Stevens of Pulse Engineering has taken over the next two year term and is currently preparing the next survey for mailing this March. Dr. Roy VanKoughnett, Director of INMS, has thanked Wayne and all the members for this survey which he says has been valuable in assisting him with their programs planning. (Ed Note: See Committee News for a response from INMS)

Past activities:

The Canadian region Fall Workshop and Symposium was very successfully held at the Bedford Institute of Oceanography in Dartmouth, Nova Scotia.

Satoshi Nishio organized the Western Canada area Fall meeting which was held at Powertech Labs Inc in Surrey, British Columbia. Papers presented are included in the mailing of the fall region symposium proceedings. Members wishing to participate or attend their future meetings should telephone Satoshi at 604-431-8882.

We of the Canadian Region thank the Board members for all the work done in 1995. It has been a pleasure working with you all. We are all pleased to be helping out again in 1996.
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*See next page for acronym definitions
DEFINITIONS OF ACRONYMS OF LIAISON ORGANIZATIONS

A2LA American Association for Laboratory Accreditation
AIA Aerospace Industries Association
AMMAC Asociacion Mexicana de Metrologia
(Mexican Association of Metrology)
ANSI American National Standards Institute
ASQC American Society for Quality Control
ASTM American Society for Testing and Materials
CORM Council for Optical Radiation Measurements
CPEM Conference on Precision Electromagnetic Measurement

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<td>(404) 494-2900</td>
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<td>81-426-42-8497</td>
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<td>William F. Doyle</td>
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