THE AUSTRALIAN METROLOGIST

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THIS SPACE

BEING FILLED

(See page 12)

FROM THE PRESIDENT

Communication is the lifeblood of any organisation. I am therefore concerned that there has been little chance to keep you informed on events within the MSA since March. You are undoubtedly wondering what has been happening. Actually, rather a lot. The highlights include: our first official members meeting, our first social function, passing the 250 members mark, initiating the process of incorporation and having designs for our logo prepared by a professional graphic artist.

Many of your questions will be answered by this issue of "The Australian Metrologist" and the accompanying information. Currently we are capable of four issues of -"The Australian Metrologist" per year and this requires heroic effort by John Mitchell and his team. The problem is that we need more regular communication than this.

Contacting more than 250 members from all over Australia is not an easy task. Perhaps by the next millennium (only 5½ years to go!) we will be using computer networks and information super-highways. Until then, other steps need to be taken. To this end, we have taken the following initiatives:

(a) We have accelerated the development of state groups. Two or three members from each State have been invited to arrange local meetings with the aim of electing State coordinators. The role of the State coordinators will be to organise regular State meetings and activities, thus bringing the local members into direct contact. They will also act as information sources, passing on information from the national committee to the local membership.

(b) The Communications Sub-Committee have been given the task of investigating methods by which more frequent communication could be possible, such as mailing a small monthly newsletter, broadcast faxes, electronic bulletin boards, etc. If anyone has any ideas in this regard, please let us know.

Two short articles on Philip Ciddor and Eric Thwaite appear in this issue. Both retired recently after illustrious careers at the top level of Australian and international metrology. They were among the first to join the MSA, giving vital support and credibility to a fledgling organisation. On a personal note, I would like to thank them for their advice and friendship over the years at NML.

This loss of metrology experience and skill from Australia's measurement system is unfortunately common these days. This raises the issue of training. I was therefore pleased to see a brochure land on my desk recently promoting a metrology TAFE course designed by the National Standards Commission in consultation with TAFE and industry. Dr Graeme Harvey, a member of the MSA national committee, played a large role in the development of this course and is to be congratulated. Incidentally, Graeme gave an excellent and well-received talk on the National Metrology Policy being developed by the NSC at our members meeting in March.

As mentioned, meetings in each State will soon be held and State Coordinators elected. I would like to issue a challenge to each State to have held either an additional MSA social function or technical meeting by the time of the next issue of "The Australian Metrologist".

John Miles

EDITORS PAGE

Under Way

It is now a little over a year since a small group met over lunch to discuss how to go about establishing a professional body to represent the interests of metrologists. I sometimes wondered whether the project would work even though it seemed to be such a good concept.

Now, in the middle of putting together the second issue of *The Australian Metrologist* for the benefit of over two hundred and thirty members, I wonder how I ever managed to have any doubts.

The challenge now is to fulfil the aims that we have agreed to pursue. My own obligation as editor of your newsletter is to ensure that it fulfils your expectations and to make each issue better than the last.

You will note that this issue is 50% larger than the last, has been professionally printed and includes some photographs. Please let us know what you think.

Positions wanted/vacant is a section which we hope will be both popular and useful to our members. Another area we want to develop is a technical advice column where you can write in with a measurement problem and receive an answer in the next issue.

Thanks to all who have contributed and helped out in the production of Issue 2.

CONTRIBUTIONS

If you would like to contribute articles, letters or news, the preferred formats are:

1. *WordPerfect file*
2. ***ASCII (unformatted)*** Text file
3. Typed text
4. Neat handwriting

Contributions should be sent to:

The Editor
The Australian Metrologist
c/o 7 l-73 Flemington Road
North Melbourne VIC 3051

Fax (03) 326 5148
Phone (03) 329 1633

The deadline for the October issue is:

30 September

IN THIS ISSUE

THANKYOU
Instrument Calibration And Metrology Services (ICAMS)
of
Australian Defence Industries Limited
for their sponsorship of this issue.

SPONSORSHIP

Would you or your company be interested in sponsoring a future issue of ***The Australian Metrologist?***

If you are a Member or your company is in the metrology business, a contribution of $350 goes a long way towards covering the printing costs and permits the sponsor to include a relevant insert (up to A4 in size) in the mail-out.

Write or fax the Editor if you are interested.

LETTERS TO THE EDITOR

Who has the right?

As a metrologist caught in the middle of a common dilemma, I plead with the other metrologists of Australia to help me in answering the most often asked question: "Who has the right?"

A typical scenario:

- **NATA** Calibration laboratory performs the appropriate tests on an item of test equipment for a customer.
- Certificate issued on the test equipment indicating a minor non-conformance.
- Customer is being assessed to AS 3902 by a certifying authority.
- The auditor/assessor on perusing the NATA certificate indicates to the customer that the test equipment does not conform to the appropriate standard, (i.e. minor non-conformance), and that the test equipment cannot be used.
- The customer argues with the assessor that the non-conformance is within acceptable limits for his type of work.
  The most common occurrence/outcome: hold point.

In further discussion, the customer indicates to the assessor that his/her co-assessor had given the OK to a company up the road for a similar occurrence.

I question who has the right in determining acceptability for use of test equipment.

Perhaps it should be bought to the notice of quality assessors that there are three words which may have escaped their vocabulary: "common sense" and "consistency ".

Perhaps also, this might also raise the question of whether NATA laboratories should state that an item conforms or does not conform to a standard or test?

I beg the question and, most importantly, I seek your views.

Frustrated Metrologist

Ed: I have published this letter despite the lack of name as it raises an important issue. Preference will, however, always be given to signed letters unless good cause is given for anonymity.

Letters should be limited to 200 words. Authors will be contacted should editorial changes or verification of material be considered necessary. Space limitations may require letters to be held over till the next issue.

THE CMM GROUP

Coordinate measuring machines (CMM's) have brought about a revolution in industrial measurement techniques, particularly in the last 10 years, and their use is increasing rapidly worldwide. Their universal capability and level of automation are gradually replacing classical methods but, because they are high technology instruments, their full potential can only be realised with a full understanding of the system and processes. To achieve this the CMM Group was formed in 1988 and operates in conjunction with CSIRO's National Measurement Laboratory. Its aim was to encourage the highest standards in industrial CMM usage by providing members with access to the technology and to a nationwide coordinate measurement assurance program (COMAP).

Since then, the CMM Group has conducted meetings in Sydney, Melbourne and Adelaide, most with overseas speakers and guests and some with associated industrial visits. The Group has provided CMM related input and consultation to NATA, SA, TAFE and NSC. It has achieved recognition and respect both locally and internationally. Its success is reflected in the formation of a similar group in the UK in 1991 and plans are under way to set up groups in Italy and Canada.

NML provides two traceable NML-calibrated artefacts for the COMAP, one a 600 mm stepgauge and the other a 300 mm ballplate. It is also planned to acquire a 600 mm ballplate.

The stepgauge, which is calibrated by NML to an uncertainty of $\pm$ (0.2 + L[mm]/750)μm using a laser interferometer measurement system in combination with the CMM, is used by a number of CMM suppliers to verify and adjust the performance of industrial CMMs with a traceable artefact.

The ballplate is calibrated on NML's precision CMM using methods developed during an international ballplate comparison organised by PTB Germany in 1992. The greatest uncertainty of calibration at the extremes of the ballplate is $\pm$ 1 .O μm. It is used by CMM Group members to assess the performance of their CMMs mainly for quality system requirements. The measurement results are evaluated by NML and a report is issued. This process of monitoring the performance of CMMs is used extensively in Europe and may be expanded into the Asia Pacific region.

For further information about The CMM Group contact the Secretary, C Sona (Phone 02 4 13 7 195, Fax 02 4 13 7200) or the Chairman R McBain (Phone 03 318 4342, Fax 03 3 17 9954).

Carl Sona

TRAINING IN MEASUREMENT SKILLS

Very few in the Australian measurement community would doubt or question the essential part played by measurement in the quality of the goods produced and services provided within out society. An often ignored aspect of measurement is the level of the knowledge and skills of the people responsible for making measurements. The measurement competence and skills of the workforce becomes a critical factor when it is realised that over 70% of the value added to goods and services by measurement-related activities is skills-based.

A lack of understanding of the vital links between workforce competence and skills and the success of industry has been recently identified in two studies carried out by the OECD on technology and the economy. Although these studies were conducted independently, the results have converged on remarkably similar conclusions; that under-investment in intangible areas such as education, training and skills have lead to impediments to growth in industry. In particular, in one of the studies on further eduction and training it became apparent that:

> ***surprisingly little was understood about how education and training contributed to skills and how they in turn lead to improved productivity and competitiveness.***

This lack of understanding of these links, particularly here in Australia, was recognised in the 1988 DEET paper - "Skills for Australia" when it stated that:

> ***The world's most successful economies have typically given high priority to basic education and to skills which determine competence at work. They have shaped their skills development policies accordingly. Australia has not seen this relationship so clearly; the time has come to do so, and to act accordingly.***

More specifically, a fundamental lack of training in measurement skills was identified when, in 1989, the National Standards Commission was approached by the Department of Defence regarding the limited availability of formal training for calibration technicians in both the defence forces and private industry. It was evident that, with the exception of the in-house RAAF calibration course at the Richmond Base in NSW, now being scaled down, few if any formal training courses existed in Australia for calibration technicians and professionals.

In response to the Defence Department's concerns, the Commission established the Measurement Skills Committee which comprises key representatives from industry, CSIRO, NATA, DEFENCE, DEET and the Commission, to steer and oversee the direction of work in the area.

The first task undertaken by the Committee was an extensive survey of some 3 19 NATA registered calibration laboratories. The results of this survey confirmed the concerns of the Department of Defence. The survey also indicated that there were at this time specific shortages of skilled and appropriately trained calibration technicians in the mechanical and electronic/electrical areas. Formal training in this area in Australia is at best piecemeal, and most skills are obtained "on the job" with no guarantee of the quality of the skills.

A more recent survey, conducted by the Commission's Industrial Measurement Committee in 1993 of a much broader group of industries, confirmed that one of the greatest concerns industry has is the lack of appropriate metrology courses and training for its workforce.

Out of these concerns the Committee has initiated and developed a set of 30 TAFE training modules for calibration technicians in close consultation with industry and TAFE.

Clearly, however, there appears to be a fundamental need for a coordinated approach to the promotion of good measurement skills and appropriate training. The Commissions' Measurement Skills Committee having successfully completed the modules is currently promoting the adoption of the course throughout industry and vocational training colleges to ensure that appropriate skills training is available to support industry and community needs.

The committee is also looking into other ways of promoting and ensuring good practice in measurement. It is currently liaising with the National Training Board to ensure there are appropriate competencies in metrology for analytical chemists and is currently investigating the development of an education kit for junior secondary schools on measurement in sport.

Details of these modules can be found in the brochure included with this newsletter or by contacting the National Standards Commission on telephone number (02) 888 3922.

Kerry Marston
Measurement Skills Policy Officer
National Standards Commission

COMMITTEE UPDATE

Management Committee

We are disappointed to report that Bob Collins of ASTA Engineering has resigned from the committee due to work commitments. Bob has been very enthusiastic about the Society and his many years of experience in electrical and thermal metrology would have been appreciated on the committee. We do, however, look forward to his contribution as a Member.

Glenda Sandars, the Standards Liaison Officer with the National Measurement Laboratory, agreed to fill the vacancy and her appointment was confirmed at the recent Meeting of Members. Welcome Glenda.

The committee is now meeting every five to six weeks to ensure the momentum is maintained. If you have anything which you want the committee to discuss or ideas for making the Society better, please do not hesitate in contacting the president, secretary or any other member known to you.

Communications Sub-Committee

Apart from responsibility for the production of *The Australian Metrologist* and the coordination of communications generally, this sub-committee has responsibility for the promotion of the MSA.

Current projects include the production of an information pack for supply to the media, industry and government when information is sought on the Society, its aims and activities. Already, there have been requests from magazines wishing to give the MSA some coverage and from other organisations wanting further information. It was felt by the management committee that we need to have such a package to supply to parties which provides the same information in a clear and accurate manner.

Another task is the preparation of some posters suitable for display at exhibitions and conferences and small fold-up displays on which could be supplied information and membership details. This latter promotional aid will be fold-up and suitable for dispatch by post-pack to any member able to use it at an exhibition.

These projects will have to wait for the logo to be finalised but the intention is to have them available as soon as we can.

Membership Qualification Committee

The Membership Qualification Committee has held eleven meetings (seven since the previous edition of The Australian Metrologist) to assess applications. Up to the 30th May, 233 applications for membership have been addressed by the committee.

The Committee has had very few problems in approving applications and have needed to follow up only on a few occasions where the prospective member did not furnish enough information on the form.

Foundation Membership is now no longer available and any new members are required to use the new ***Application for Membership 1994*** form. You will notice that all applications for **Full Membership** require a Proposer and Seconder (who must be financial members of the society) to countersign the application form thus verifying qualification for that grade of membership. The applications will still be subject to Membership Qualification Committee vetting and Management Committee ratification.

The Committee is in the process of preparing a comparison chart for qualifications for reference when looking at overseas, government (public service), and others which have caused some delays in the decision making process when assessing applications.

A list of all members accepted since our first issue is provided showing the discipline and state (location) for use of members in each area who may have a need to contact other members.

As shown in the previous issue of the Australian Metrologist the response for membership from states outside Victoria has been tremendous and a break-up of that distribution is as follows:-

Victoria	114 members	49%
New South Wales	6 1 members	26%
South Australia	23 members	10%
Queensland	23 members	9.5%
Western Australia	7 members	3%
Northern Territory	2 members	1%
Tasmania	2 members	1%
ACT	1 member	0.5%
Total	**233**	

Again, it is with much pleasure that we announce that the following metrologists have been granted membership since the first issue of *The Australian Metrologist.*

Australian Capital Territory

Mr Eduardo Apoderado	Dimensional/Physical

New **South Wales**

Mr John Walsh	Electrical
Mr Michael Cook	Electrical
Mr Peter Langley	Electrical
Mr Peter Mayo	Dimensional(gears)
Mr Philip Heskett	Electrical
Mr Jung Chen	Dimensional
Mr Noel MacGregor	Electrical/Dimensional
Dr Bruce Morrison	Electrical
Mr Robert Woo	Electrical
Mr **Brenton** Hodgson	Electrical/Physical
Mr Donald Groeneveld	Physical
Mr Patrick **McErlain**	Physical
Mr Barry Deeth	Electrical
Mr Gary Price	Chemical
Mr Carl **Sona**	Dimensional
Mr John Birch	Multi-disciplinary
Mr Stuart Findley	Dimensional/Physical
Mr Stephen Grady	Electrical
Mr Peter Coogan	Electrical
Dr Juris **Rungis**	Electrical
Mr Eric Thwaite	Dimensional
Mr Ian Hoerlein	Physical
Mr John Ebsary	Electrical
Mr Lyndon Branscomb	Electrical/Physical
Dr John Hunter	Electrical
Dr David Gowdie	Physical
Mr Victor Lawrence	Physical
Ms Kerry **Marston**	Chemical
Mr Ian Paterson	Physical
Mr Paul **Martinus**	Physical
Dr Brian **Ricketts**	Electrical
Mr Greig Small	Electrical
Mr Peter Underwood	Physical
Mr Patrick Casey	Dimensional
Mr Maxwell **Purss**	Dimensional/Physical
Mr Gordon Slimmon	Electrical
Mr Stephen **Buckman**	Physical
Mr Patrick **Hogbin**	Dimensional
Mr Jeffrey Andrews	Dimensional
Mr Bruce **Meldrum**	Acoustical
Mr Mozart Sovierzoski	Electrical
Mr Ronald **Petto**	Electrical
Mr Ilya Budovsky	Electrical
Mr Douglas Burgess	Electrical
Mr Michael Gibbes	Electrical
Mr Barry Sutcliffe	Electrical

Northern Territory

Mr Colin Maclachlan	Physical
Mr Leslie Anderson	Electrical

Queensland

Mr Barry Neville	Physical
Mr Roy Bruce	Electrical
Mr Donald **MacQueen**	Electrical
Mr **Damian** Ousley	Physical
Dr Ian Cowling	Multi-disciplinary
Mr Brian Brannelly	Dimensional
Mr Andrew Kirby	Dimensional
Mr Raimondo Pippia	Electrical
Mr Nigel Lane	Multi-disciplinary
Mr Stephen Williams	Electrical
Mr **Stephan** Chakalakis	Physical
Mr Andrew Little	Dimensional/Temperature
Mr David Johnston	Physical(Legal)

South Australia

Mr Peter Hodgson	Electrical
Mr Richard Duncan	Dimensional
Mr Walter Iwanicki	Physical
Mr Mark **Histed**	Electrical/Temperature
Mr John Pearce	Multi-disciplinary
Mr Blair Howell	Electrical
Mr Dennis Leaney	Electrical
Mr Peter Gray	Electrical
Mr Barry Downs	Electrical
Mr **Allan** Ward	Dimensional
Mr Ian Asmussen	Dimensional/Electrical
MI Richard Lange	Electrical/Temperature
Mr Harold Stasinowsky	Electrical
MI **Brenton** Watkins	Electrical/Temperature
Mr Ian White	Electrical/Physical
Mr Timothy Watts	Dimensional

Tasmania

Mr Philip Wilde	Dimensional
Mr Orla Kjaersgaard	Physical

Victoria

Mr Raymond Harvey	Dimensional
Mr Wolfang Norkowski	Dimensional
Mr Anthony Dyke	Photometry
Mr John Wild	Dimensional
Mr Matthew Kennedy	Physical/Temperature
Mr Andrew Jackson	Dimensional
Mr Emanuel Pinczower	Electrical
Dr Howard Wright	Physical
Mr Johannes Sieker	Dimensional
Mr Michael Snell	Physical
Mr Anthony **Palmi**	Dimensional/Physical
Mr David Little	Electrical
Mr Nick Provenzano	Dimensional
Mr Leslie Valentine	Dimensional/Physical
Mr Gregory Hayes	Electrical
Mr Chris Knuckey	Physical
Mr John **Meriton**	Physical

Victoria (cont.)

Mr Max Dawkins	Electrical
Mr John Newman	Physical/Temperature
Mr Ian Martin	Dimensional
Mr George Occhipinti	Dimensional
Mr Mark Thomas	Electrical
Mr Wilfredo Satorre	Physical
Mr John Dundas	Electrical
Mr Graeme Savige	Electrical/Temperature
Mr Andrew Bilyj	Electrical
Mr Jack Duce	Physical
Mr Kenneth Bassett	Electrical
Mr Kent Gregory	Physical
Dr Bruce Forgan	Multi-disciplinary
Mr Rhys Kimber	Dimensional
Mr Ronald Breen	Dimensional
Mr Keith Kaulfuss	Electrical
Mr Rodney Pyke	Electrical
Mr Philip Sanders	Electrical
Mr Thomas Boon	Dimensional
Mr Graeme Rattew	Dimensional
Mr Randall Anderson	Physical
Mr William Johnstone	Dimensional
Mr Mark Duce	Physical
Mr Ronald Fronda	Dimensional
Mr Mark Pilkington	Electrical
Ms Michele Skamp	Dimensional
Mr Graham Lucas	Electrical
Mr Kevin Smith	Electrical
Mr Robert Graham	Dimensional
Mr Michael King	Dimensional
Mr Christopher Cockett	Electrical
Mr Walter Giardini	Dimensional/Physical
Mr Thomas Doney	Electrical
Mr Bernard Anderson	Electrical
Mr Paul Standaert	Electrical
Mr Brendon Dickins	Chemical
Mr Neil Smith	Dimensional
Mr Peter Beggs	Electrical
Mr Greg Cunningham	Electrical
Mr Michael Hadley	Dimensional
Mr Philip Noon	Electrical
Mr Bruce Rossi	Electrical
Mr James Gordon	Dimensional
Mr Leonard Kerwood	Dimensional
Mr Lutgardo Santos	Dimensional/Physical
Mr Bruce Farr	Electrical
Mr Maxwell Baxter	Electrical
Dr Valery Davydov	Electrical
Mrs Eugenia Kleftouris	Dimensional
Dr Stephen Jenkins	Radiometry
Mr Graham Britton	Physical
Mr Robert Weatherson	Dimensional/Physical
Mr Alan Worroll	Dimensional

Western Australia

Mr Derek Ball	Electrical
Mr Clement Rowe	Physical
Mr Peter Duncan	Dimensional/Physical

POSITIONS WANTED

Morwell region. Six years electrical calibration experience in dc and low frequency ac measurements in a NATA registered laboratory. Experience in the implementation of NATA requirements and AS3900 series requirements in a laboratory. Associate Diploma in Electrical Engineering. Computer literate. Would like to stay in measurement but willing to learn other disciplines. Ref # w94202

If you would be interested in talking with any of these metrologists, please write to or fax the editor so that they can be put in touch with you.

Need a Position?
Write to or fax the editor with your details including years of experience and qualifications. This service is offered free of charge.

POSITIONS VACANT

Melbourne. Experienced senior metrologist in temperature measurement and calibration wanted for a flexible hands-on supervisory position in a public testing facility. Previous experience as a NATA signatory as well as in quality systems and/or other metrology fields is desirable. Drivers licence essential. Ref # v01294

If you are interested in this position, please write to or fax the editor.

Need a Metrologist?
If you have a position vacant, write to or fax the editor with the details. A charge of $20 for up to 10 lines applies. Remember, the circulation may be small but it's well targeted!

The deadline for positions wanted/vacant is five days before publication.

Technical problem?

If you have a particular technical problem which you have been struggling with, why not write to us? We will attempt to have a person with particular expertise in that area provide the answer for the next issue.

Just in case you are shy about admitting that you don't know everything, we will take these questions anomymously .

SOCIAL EVENTS

It has been proven at last, one of the most challenging questions of the century:

> "Will a shiny ball beat a dull ball when directed at a small wooden boulle in the rough terrain of a winery car park"?

This question was answered recently at the first social function of the MSA held at Hahns Creek Estate Winery on the Mornington Peninsula on Sunday the 22nd May.

A five course luncheon accompanied by some excellent peninsula wine were just the ingredients needed for some 37 highly skilled and motivated metrologists to prove that they can match it with the best in the challenging game of PETANQUE, or to the uninitiated, BOULLE. As one wife was overheard saying: "I never knew my husband had such clever ball handling skills."

This challenging ball game enthralled the more adventurous metrologists and their partners, who braved the chilly weather and ventured away from the barrels and the cosy wood fire to seek fulfilment by increasing their capacity to throw/hurl a heavy steel ball at a smaller ball. Difficult rules such as - get it nearest to the small ball - were eventually understood by those who played on the not so level playing field.

After intensive rivalry the difficult selection of two players per team were worked out and the challenge began to delve into the realms of mystery and find out which is best: "the shiny ball or the dull ball".

So it went and the answer became quite clear:

> " A shiny ball expertly directed by a trained metrologist skilled in the sciences of length and angle measurement will always beat a metrologist with dull balls".

hence the challenge will be accepted at the next social function.

The winners of the draw for bottles of fine wine were:

> "BIG MAC from the SEC
> and
> KNUCKLES from **ASTEG" .**

Many thanks-to those who attended our first social function and special thanks to our hosts Denise and Tony.

Question: Any ideas for the Christmas function.

Ron McBain
Chairman, Social Sub-committee

[I'm not suggesting that Ron consumed too much of the fine wine but, rumour has it, at work on the Monday morning, he showed a high degree of uncertainty with a very low confidence level.]

Top: Ron Cook thought it a nice red, Ruth Cook and Colin Wagg weren't too sure. Centre: John and Carol Wild and Chris Knuckey toasting something. Bottom: Stuart McDonald, Ron McBain and Wayne Eames looking comfortable.

STATE EVENTS

As a means of generating State activity, two or three Members have been contacted in each of NSW, Queensland, South Australia and Western Australia with the aim of organising a social evening in the next few weeks. These evenings will provide the opportunity of getting to know other members in an informal atmosphere. It would also be a chance to discuss what you want out of the MSA and to perhaps elect State coordinators or representatives to provide a local focus.

The following have agreed to initiate these gatherings and will be contacting you in the very near future.

NSW	Graeme Harvey	888 3922
	Glenda Sandars	413 7087
Queensland	Roy Hood	274 7750
	Nigel Lane	834 3037
	Doug Quinn	223 5354
South Australia	Tony Adams	259 5148
	Jeffrey Tapping	362 1240
	Brenton Watkins	268 6077
Western Australia	Denis Baylis	333 8832
	Paul Edwards	451 0883

The Society will be providing some refreshments. When travelling, Committee members are keen to attend functions to meet members and to obtain their ideas for further development of the MSA.

COURSES AND CONFERENCES

DO YOU MEASURE UP? - PRECISION MEASUREMENT AND ITS PRACTICAL RELATIONSHIP WITH QUALITY SYSTEMS

AD1 ICAMS, in conjunction with The Advanced Engineering Centre for Manufacturing, are holding this one day seminar on 23 August 1994. Topics to be covered include traceability, uncertainty of measurement, calibration systems, measurement and training.

Date: 23 August 1994
Venue: AD1 ICAMS
Gordon Street
Footscray VIC 3032
cost: $295
Quota: approximately 60

For further information, contact Mr Ron McBain on (03) 318 4342

TEMPERATURE MEASUREMENT

The CSIRO Division of Applied Physics is running this five day intensive course in the theory and practice of temperature measurement at the National Measurement Laboratory.

The course provides the opportunity to gain knowledge about general principles of measurement as well as particular techniques and consists of both lectures and practical sessions. It will be of value to technicians, engineers, scientists and others involved in, or responsible for work in which temperature measurement is important.

Lectures will be given by members of the Division, each a specialist in the appropriate subject with experience in calibration, research and industrial consultation. Nineteen hours of lectures will be given on a wide range of instruments including platinum resistance and liquid-in-glass thermometers, thermocouples and radiation pyrometers. Cryogenic thermometry and humidity measurement will also be covered.

Ten hours of hands-on practical exercises and demonstrations will illustrate and reinforce the course work. Ample time will be allocated for informal discussions with lecturers. Detailed notes will be issued on all lecture material.

Dates: 10 - 14 October 1994
Venue: National Measurement Laboratory
CSIRO Division Of Applied Physics
Bradfield Road
West Lindfield NSW 2070
cost: $950
Quota: approximately 60

For further information, contact the organiser, Mr Robin Bentley, on (02) 413 7764.

For the Grey Matter (based on J S Miller's ***Miller-grams)***

1. For the physical metrologists, you travel from point A to point B at an average speed of 40 kmph. At what speed must you return to have averaged 80 kmph for the journey?

2. And for the thermodynamically inclined, you have made yourself a cup of coffee and are just about to add the milk when you remember that you've left the bath running. For the hottest drink, do you add the milk before or after going to turn of the water?

3. Finally for the time buffs, what is the time interval between 1/7/30 BC and 1/7/70 AD?

NML NEWS

95% Confidence Level

The 1st of July is the official change to a 95 % confidence level for statements of uncertainties of measurement. NML is also adopting the **ISO** TAG 4 document as the basis for the calculation and reporting of uncertainties.

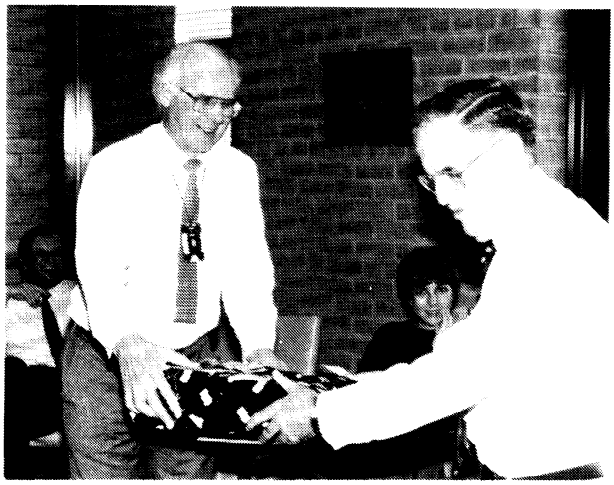
Indonesian Visit by MSA Members

Four NML staff visited Indonesia in May to view the country's progress on national standards of measurement. John Miles, Peter Coogan, Don Groeneveld and Glenda Sandars, all MSA Members, spent time with their counterparts at the Research and Development Centre for Calibration, Instrumentation and Metrology (KIM). It is likely that NML will be assisting KIM to raise the level of their standards over the coming months.

86 Years of Experience Retires

On 26 April, staff at the National Measurement Laboratory gathered to farewell **Eric Thwaite** who retired after 44 years' service. Eric joined as a Research Officer when the laboratory was located at the University of Sydney and conducted research into the mechanical effect involved in the comparison calibration of line standards and end standards. His work soon broadened into many associated areas: surface roughness, non-contact optical displacement measurement, Coordinate Measuring Machine (CMM) technology, the geometry of large gears, hardness and microhardness measurements in metals, plastics, rubbers and composite materials. Eric's research was often directed to very practical outcomes and, with various teams of colleagues, he led the development of a number of unique instruments. These included a portable gear measurement instrument and an **ultra**-microindentation system (UMIS) for characterising the mechanical properties of very thin surfaces such as those used in the manufacture of semi-conductor components. Eric also served on a number of Standards Australia committees which dealt with dimensional measuring instruments. Since 1982, Eric had been Project Leader for the engineering metrology section of the Laboratory. Although officially retired, he will continue to work at the Laboratory as an Honorary Fellow providing valuable expertise to his successors.

Continuing the departure of long-serving staff officers, **Philip Ciddor** retired after 42 years' service and was farewelled at a function on 13 May. Philip also joined the Laboratory at its University of Sydney location and was involved in introducing the then new technique of interferometry to the measurement of length standards. His expertise in optical and laser-based techniques led to development of thin film reflectors for interferometers, contributions to solar and stellar astronomy, and involvement in research underpinning redefinitions of the metre, the volt and the ohm. The practical outcomes of Philip's research were many: assistance to the surveying community in establishing a baseline and calibration method for verifying electromagnetic distance measuring (EDM) instruments, development of a tape calibration facility, contributions to the development of high-power lasers (later "spun-off" into a commercial venture). Philip also gave many years of support to legal metrology, providing his expertise to the work of the National Standards commission and the various State Weights and Measures and surveying authorities. In 1982, Philip became Project Leader of the length standards section of the Laboratory but, with typical generosity, stepped aside in the early 1990s to ensure a smooth transition to his successor. Philip will continue the admirable trend among recent retirees of working at the Laboratory as an Honorary Fellow.



Eric Thwaite (top left) and Philip Ciddor (bottom right) are presented with farewell mementos by Bill Blevin, Chief of the Division of Applied Physics.

EDITORIAL

Metrology and Quality Assurance - A Vital Opportunity

Quality systems certification has had an amazing growth over the past five years both here in Australia and internationally. Whether by design or contractual obligation, a significant proportion of the manufacturing and service sectors, both private and public, have obtained or are seeking certification to the IS0 9000/AS 3900 series of standards.

One of the results from this rush to be certified is the growth in awareness of the need to calibrate or verify test and measurement equipment. To anyone who considers measurement to be important, this has been encouraging.

Thanks to the clauses addressing test and measuring equipment, many who had never before contemplated calibration were made aware that their measurements affecting quality should be traceable to a known standard and that this would be subject to scrutiny by the certification process. There has, however, been some considerable concern expressed by many metrologists about both people's motivations for having calibrations performed as well as what is being calibrated.

Indeed, calibration laboratory staff tell of the truckloads (literally) of equipment which is delivered for calibration, most of which is required urgently for a forthcoming audit. In such instances, the certification process is tending to appear as the goal instead of the achievement of quality through good measurement.

Also particularly disturbing are the instances of what can only be described as unfortunate advice, sometimes requirements, being given to companies. The result is sometimes a large sum of money being spent on calibrations which are unnecessary, inappropriate or inadequate. In some cases, instruments used only for indication are calibrated while others which are critical are not touched because of some false confidence in their inherent stability or a lack of appreciation of the devices purpose.

Three examples follow. These are, unfortunately, actual events.

A small to medium sized manufacturing company was told by someone providing advice on what would have to be done to obtain quality system certification that they would have to have all of their arc welding machines calibrated. There was nothing exotic about either the machines themselves or the work being undertaken. The company employed only qualified operators. The cost of having some forty welders "calibrated" periodically was an expense which they could ill afford and one of dubious benefit.

During a review of a company's calibration system, it was pointed out to the factory staff that a micrometer lacked a calibration label. The group then walked past a large coordinate measuring machine, vital to the manufacturing process, without any comment re its calibration status.

The third case was the manufacturer being told not to use his calibrated set of gauge blocks to verify micrometers but to make up a set on the milling machine. These were to be checked against the reference blocks and used for micrometer calibration so that the calibrated ones did not become worn. There was no mention of a transfer method for checking the home-made set and no mention of tolerances nor uncertainties of measurement.

There are many other instances which could be recounted. The point is, however, that measurement is not well understood. Many of those giving this advice are entirely sincere and give it in good faith. Unfortunately, the recipients are often not well informed and take such advice as coming from those far more knowledgable.

The results can be twofold. Firstly, the organisation can spend time and money and receive little or no benefit. Following from this, the quality industry suffers in terms of credibility.

The only answer to this is education. Up till recently, however, there has not been a means for metrologists to tackle the problem except as individuals.

The MSA now provides a forum to discuss these issues, an opportunity to determine strategies for promotion of the science of measurement and a body to speak on your behalf to other organisations which need to be made aware of the contribution that skilled metrologists can make to quality.

This is an opportunity for the Metrology Society to make a real improvement in the quality infrastructure of Australia. We must meet it.

John Mitchell

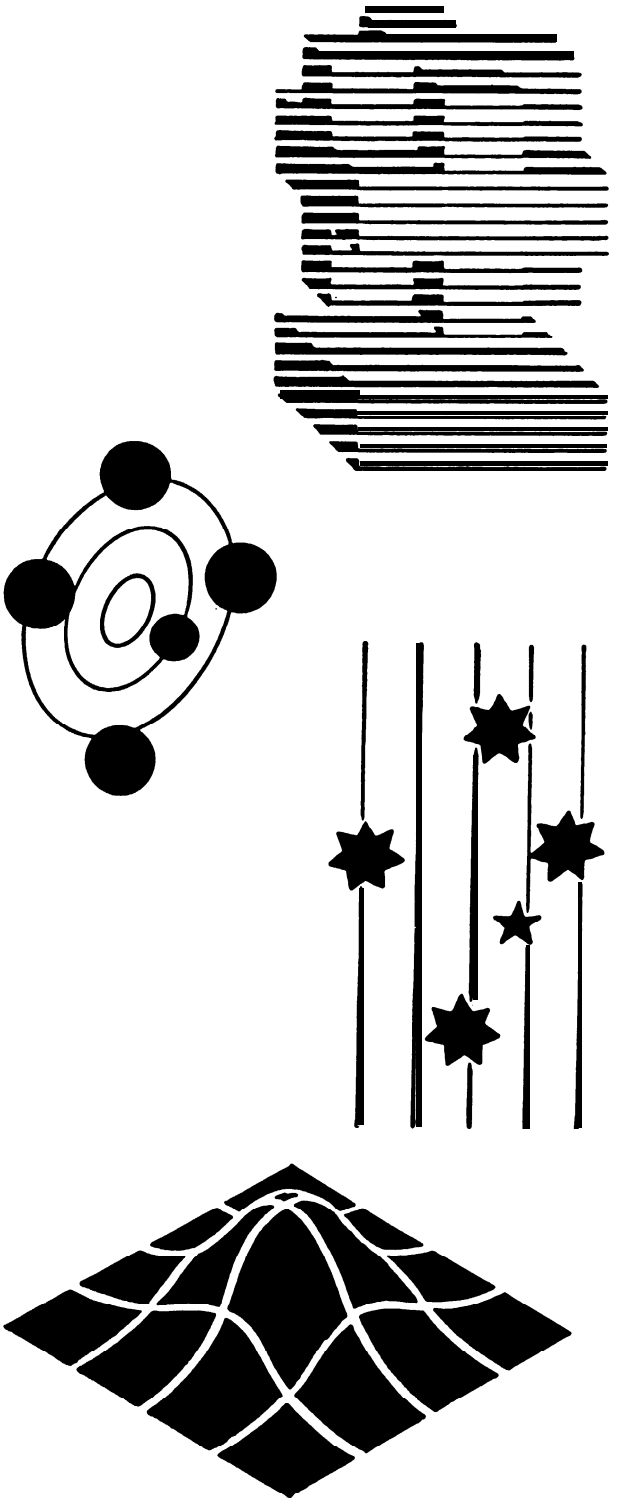
MSA LOGO DESIGN

Thankyou to the following members who sent in their suggestions for our logo.

Denis Baylis	Ron Cook
Patrick Fogwell	Ronald Fronda
Denis Leaney	John Miles
Bruce Morrison	John Newman
Bonni Olaver	Max Purss
Carol Sieker	Alan Worroll

All of the suggested designs have been forwarded to Neil Moorhouse, the commercial artist employed by Alex Smart on our behalf. Neil has come up with some common themes. These include representations of the plus/minus sign relating to uncertainties, a target and Southern Cross combination, a normal distribution and a digital MSA . Representative examples appear on the right.

If you would like to express your preference, write or fax the editor before 29 July. It's not long to decide but we need the logo for the membership certificates and for promotion.



MARCH MEMBERS MEETING

The meeting of members held on Monday 21 March at CSIRO in Clayton was a most successful evening. The formal proceedings went smoothly and were followed by a very interesting and entertaining talk by Graeme Harvey of the NSC and a very pleasant supper thanks to the organisation by Ron McBain.

The key issues voted on were the acceptance of the rules and the vote on incorporation of the Society. Both proposals were passed unanimously.

You **will find enclosed with this issue a copy of the minutes of the meeting.** Please take the time to read these and do not hesitate in contacting either the President or the Secretary should you have any queries.

Our first Annual General Meeting comes next and notices of this will be forwarded in the coming weeks.

DATES TO REMEMBER

29 **July**	**Closing date for logo feedback**
23 August	**ICAMS Conference**
30 September	**Deadline for next issue**
10 - 14 October	**Temperature Measurement Course at NML**