

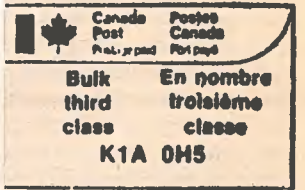
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Vol. 6, No. 10

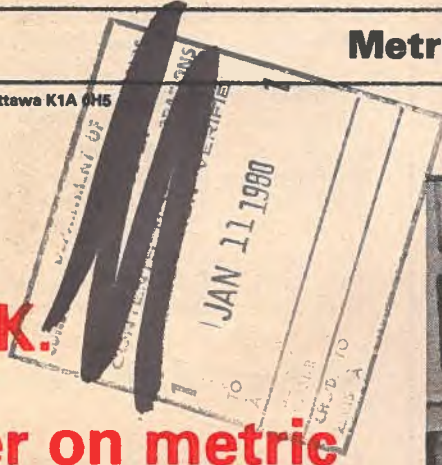
Metric Commission Canada

1979-11/12

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**Canada,
U.S. and U.K.
get together on metric**



Society of Manufacturing Engineers awards citations to metric experts

The Society of Manufacturing Engineers (SME) On Campus Metric Conference held at Long Beach, California 1979-10-06 featured outstanding metric experts from industry and education and professional organizations representing the U.S. Metric Association, American National Metric Council and Metric Commission Canada.

Among the speakers were Frank Dugal, director of engineering industries plans at Metric Commission Canada, who spoke on the

Canadian manufacturing industry and metric conversion; Louis Sokol, president of the U.S. Metric Association who outlined the USMA's Certified Metrication Specialists program; Dr. Louis Polk, chairman of the U.S. Metric Board, the featured keynote luncheon speaker, who spoke on the progress in metric conversion in the U.S.; David Gorin, director of programs at the American National Metric Council, who spoke of the Council's continuing role in metric conversion; and Roy P. Trow-

bridge, director of standards*for General Motors, who spoke of the conversion program at GM.

The 550 attendees represented industrial and retail companies, technical and trade societies and educational institutions. Throughout their talks, the speakers discussed how to cope with metric conversion as the U.S. converts to metric. Exhibits included samples of materials and activities used in business, industry and education for the training/retraining of their constituents in the metric system.



A special citation for metric conversion achievement was awarded to four metric conversion experts at the SME Region VII On Campus Metric Conference at Long Beach City College, Long Beach, California in October. Here we see Al Siggson (right), conference chairman and senior standards engineer and metric coordinator for Northrop Corporation Northrop Aircraft Group, Hawthorne, California, presenting the awards to (l. to r.): Dr. Louis Polk, Sr., chairman of the US Metric Board, Arlington, Virginia; Louis F. Sokol, president of the U.S. Metric Association, Boulder, Colorado; Frank Dugal, director of engineering industries plans, Metric Commission Canada, Ottawa; Everett L. Baugh, executive engineer for metric planning activities, General Motors, Warren, Michigan who accepted the award for Roy P. Trowbridge (not in the photo), director of General Motors engineering standards, Warren, Michigan. The award stated "citation for professional achievement contributing to metrication and to the International System of Units (SI) as the preferred measurement system throughout the world." Mr. Dugal, who was with MCC since 1973, retired from the public service of Canada on 23-11.

Read about the General Conference of Weights and Measures on centre page

Construction products file soon available to sector

The preparation and publication of a Metric Construction Products File is being undertaken by the School of Architecture, University of Toronto, as a service project for the Canadian construction industry. It will be a quarterly publication so that metric products can be listed and then be made known to designers, specifiers, contractors and other purchasers, as soon as they come on the market.

The need for the File has been recognized by the construction conversion committees and the Metric Commission for a few years, and preliminary work was done by the staff of the Metric Commission; unfortunately, there was no solution to the on-going financial means of publication. Recently the project was revived through the initiative of Peter Dobbing, now past president of Construction Specifications Canada, and the metric coordinators of a few provinces.

"Not enough is known throughout the construction industry, or Canada in general, of the tremendous effort the manufacturers have made in converting their products so that building in metric can be a reality", said Professor Stanley Kent, editor of the File.

The File will contain three major groups of information: File of Products, File of Manufacturers, and File of Distributors.

The File of Products will contain metric linear dimensions and other design properties, such as compression strength of products; availability of literature,

packaging or distribution size or quantity; special ordering requirements; reference standards (CSA, CGSB); name and location of manufacturers; name and location of distributors.

The File of Manufacturers and the File of Distributors will each contain complete name, address, postal code and telephone number of the order desk of the manufacturers and distributors. If a distributor has numerous branches in many Canadian cities, only the head office address will be shown, followed by the names of the cities where the branches are located.

Being a quarterly publication, the File will have every fourth issue a consolidation number. Annual subscriptions for the File will be \$25.00 with a special rate for bulk subscriptions.

Manufacturers who are producing metric products in accord with the recommendation of their industry's metric program or new metric national standards, are asked to send product literature and the above data to the School of Architecture for publication in the File. Data received before the last day of October, January, April and July will appear in the issue immediately following.

Enquiries regarding the submission of File data and on subscriptions should be sent to: Metric Construction Products File Project, School of Architecture, University of Toronto, Toronto, Ontario M5S 1A1.

Representatives from the American National Metric Council and Metric Commission Canada met with members of the Confederation of British Industry in London, 1979-10-18, for a fact-finding session sponsored by the United Kingdom Metrication Board. Left to right: G.H.P. Lenz, Tate & Lyle Refineries Ltd.; I. Howgate, Marconi Instruments Ltd.; O.M. Etoe, deputy director of technology, Confederation of British Industry; R. Ellard, Dunlops Ltd.; M.J.W. Norman, secretary of the C.B.I.

Metrication panel; L. Moon, Cadbury-Schweppes Ltd.; and C.L. Pulham, Courtaulds Ltd. The Confederation of British Industries favours legislated orders establishing cut-off dates for the use of the imperial system in the field of retail consumer products. In their original brief to the British government in 1965 they did not foresee the need for such legislation, but they now recognize that the final switch to metric in the retail sectors must be backed by legislation.

Lagging conversion creates difficulties — Lummus

During a talk he gave to the American National Metric Council Conference in Washington in April, Svante Humbla, manager of operations administration of the Bloomfield, N.J. division of the multinational Lummus Company, a subsidiary of Combustion Engineering, said that metric conversion is best completed as soon as possible for best results.

Mr. Humbla explained that because foreign projects added a new urgency to the conversion program, his company started planning metric conversion during the early part of this decade with a view to adopt SI in a progressive and properly timed manner best suited to yield positive returns.

The Lummus Company designs and builds refineries, petrochemical, chemical, pharmaceutical and other processing plants throughout the world. Mr. Humbla added: "We are now several years ahead of our original metric conversion schedule. This is due to the fact that we have obtained contracts for the design and construction of plants in foreign countries where the exclusive use of SI is prescribed by law. In some countries even the use of dual units is prohibited by law.

One such example cited in the ANMC *Reporter* is South Africa where customs authorities rejected and returned to the U.S. manufacturer a shipment of measuring tools which had both SI and customary unit graduations.

At the present time Lummus has under construction a very large petrochemical complex in Iraq. This country also has a strict law requiring the use of SI only. Some 50 000 engineering drawings have been prepared in SI for this project, together with many hundreds of thousands of other metric documents.

Once you have the tools for doing engineering and construc-

tion work in SI and the personnel has gotten "the feel" for the SI units, it becomes easier and simpler than working in the customary English System, says Mr. Humbla. "To prepare documents in dual units has no advantage except to carry us through the transition period. The practice of using dual units in documents should be terminated as soon as possible. It only serves as a crutch and prevents people from thinking in SI.

"Using dual unit documents and tools can also result in mistakes on the job. The best method is to work with metric tools only. In a very short time personnel will have no problems working in SI.

Cost of conversion

"When we prepared our metric conversion plan estimates were made in an attempt to determine the eventual cost to convert the operation to SI. Throughout the organization the actual cost so far is only a fraction of those estimates."

Conversion activities at Lummus include awareness and training programs, a metric practice guide, forms and data sheets, design standards, engineering specifications, computer programs, and metric purchasing and inspection.

In the area of standards, Mr. Humbla noted that at the present time, very few U.S. national standards are available in SI but are only being developed. Industry must therefore often resort to using foreign standards. Equipment and materials manufactured in accordance with such foreign standards are normally not available domestically. He adds that this results in procurement abroad even though equipment and commodities of the same quality could have been acquired domestically at more favourable prices had they been available. New

national standards normally take three to five years to develop and another four to five to reach agreement on a new international standard. Mr. Humbla said he hoped that the production of national and international standards can be accelerated in order

that we can all fully benefit from going metric.

He concluded: "Learning and using SI metric is no big deal. Our metric capabilities have already been demonstrated by the execution of several important projects in SI. Efforts toward total conver-

sion will continue as national and international business activities dictate. Significant benefits are to be reaped from using the simple coherent language of SI, and the sooner the transition period is behind us, the sooner we will see the positive results of our efforts."

Introducing:



The Home Economists in Business, a professional member group of the Canadian Home Economics Association, invite you on a delightful culinary trip from coast to coast across Canada. Through the 204 pages of "A Collage of Canadian Cooking", each province has set out several typically ethnic or regional menus. The 300 recipes are in accurate, easy-to-use metric measures, ideal for home and classroom. A unique blend of old and new Canadian dishes, the book is in a handy size, with a laminated wrap-around cover, full colour photographs inside, and a sturdy wire-o binding — the book opens flat for easy use.

Home economists across Canada know that regional dishes can be equally creative and mouth-watering in millilitres and degrees Celsius.

To order *A Collage of Canadian Cooking*, send a cheque or money order for \$7.95 for each copy to: A Collage of Canadian Cooking P.O. Box 490, Station A Scarborough, Ontario M1K 2N0.

This cook book has been granted use of the national symbol for metric conversion. The use of this symbol is granted to products or publications as a guarantee that the metric aspects are in accordance with Metric Commission Canada policies on good metric practice and conform to the national standard of Canada on correct usage of the metric units and symbols.

If you would like to know more on the subject, please write for the free leaflet "The National Symbol for Metric Conversion" to the:

A/Director of Information
Metric Commission Canada
240 Sparks Street
Ottawa K1A 0H5.

Metric standards available

The Specifications Board of Supply and Services Canada regularly publishes *Metrinote*, a list of metric standards developed in support of the metric conversion program in Canada.

The numeric designations of metric standards carry the suffix M to indicate that they are written in SI (metric) terms.

Some metric standards are new, in the sense that no standard previously existed; some will take their place alongside yard/pound counterparts that may be required

during the changeover period; most supersede their previous versions which, unless otherwise stated, were non-metric. Most products for which there are standards are now available as metric standards.

For more information concerning these standards please contact the Canadian Government Specifications Board (Sales), c/o Department of Supply & Services, Place du Portage, Phase III, 2B3, 11 Laurier St., Hull, Québec K1A 0S5.

Upcoming meetings

DATE	COMMITTEE	PLACE
1979-12-06	Steering Committee 5	Ottawa
1979-12-06	Sub-Committees 9.60 (Labour Organizations)	Victoria
1979-12-07	Steering Committee 63.06	Montreal
1979-12-07	Sector Committee 9.60 (Labour Organizations)	Victoria
1979-12-10	Sub-Committee 9.10	Ottawa
1979-12-11	Sub-Committee 9.10 (Medical Metric Practice Guide)	Ottawa
1979-12-11	Steering Committee 8.17	Toronto
1979-12-11	Steering Committee 2.07	Toronto
1979-12-13	Sector Committee 62.23	Ottawa
1980-01-07	Steering Committee 62	Toronto
1980-01-08	MEXIM Meeting	Toronto
1980-01-08	Advisory Committee on Information Policy	Ottawa
1980-01-09	Sector Committee 9.10	Ottawa
1980-01-9/10	56th MCC Meeting	Ottawa
1980-01-14	Steering Committee 63.06	Calgary
1980-01-15	Sector Committee 7.20	Montreal
1980-01-16	Sector Committee 9.51	Toronto
1980-01-17	Sector Committee 7.30	Montreal
1980-01-22	Steering Committee 4	Toronto
1980-01-23	Sector Committee 62.23	Toronto
1980-01-24	Steering Committee 2	Toronto
1980-01-24	Sector Committee 2.22	Toronto not determined
1980-01-28	Sector Committee 62.02	Toronto
1980-01-30	Sector Committee 2.34	Toronto
1980-01-31	Sector Committee 62.07	Toronto
end of Jan.	Sector Committee 7.43	Montreal

Exhibit

1980-01-26/28 Canadian Fruit Wholesalers Convention Toronto

Transition to metric

"Transition to Metric" is an audio-visual training program for employees at all job levels. The complete set consists of fourteen modules, one trainer manual, and one student manual for each module.

The following six programs form a fundamental base for an

employee metric training course:


Introduction to SI units Mass
Length Area
Volume Temperature

These programs have been submitted to and granted the use of the national symbol for metric conversion by Metric Commission Canada.

This programmed learning series uses the audio-visual medium and written support materials to aid organizations in implementing an effective and cost efficient move to metric.

By matching individual program modules to an employee's need, a personalized metric training program can be developed for any company or employee group.

For further information contact:
AV Centre
111 Bond Street
Toronto, Ontario
M5B 1Y2
(416) 362-1555



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Report on conversion in Great Britain

Here is the report on metric conversion activities in the United Kingdom which was tabled as part of the report on metric conversion in converting countries tabled by H. Moreau of the International Bureau of Weights and Measures at the General Conference of Weights and Measures in Paris, 1979-10-18.

The voluntary metric conversion program in the United Kingdom began in 1965 and has made significant progress in a number of sectors of the national economy, particularly in industry. They have not been able to stick to the 10 a deadline established at the beginning of the program but on the other hand they have now reached a point of no return.

The current situation is as follows*:

— Conversion is progressing well or in the process of implementation in agriculture, horticulture, industrial machinery, construction and in important sectors of industry, including the mechanical engineering industries. The use of imperial units is restricted to only the manufacture of spare parts for maintaining old machinery and to exporting products manufactured in imperial units; the latter market is in decline.

— Education at all levels is predominantly metric and has been metric for several years. Metric units are used in official examinations. In industry, apprenticeship work in metric units is in step with progress in the use of metric units in the individual industrial and commercial sectors.

— Metric units are used in postal and telephone services, in freight tariffs and customs tariffs, in the national health service, in several sports, and in the revised or new ordinance survey maps.

— Since 1974 Government orders authorizing the manufacture, packaging, importing and retailing of several prepackaged food products have been enforced. In 1980, about 90% of prepackaged food products sold at the retail level will be in metric units. Other consumer products are also sold in metric units as a result of decisions made by the manufacturers themselves.

— The majority of prepackaged consumer products including food products are required by law to be labelled in metric and imperial units. The requirement that they be labelled in imperial units will be

dropped as of the end of 1979.

— Since 1978-04, the retail sale of solid fuels in open containers has been taking place in metric units. All sizes of clothes are given in metric and imperial units. In many stores, cloth, wood and certain hardware items are sold in metric units.

On the other hand, conversion is not very advanced in the retail trade or in the sale of products such as meat, fish, fruits and vegetables, and gasoline which are measured in the presence of the consumer. In 1978-05, the orders prepared by the Government to prohibit, as of certain dates, the use of imperial units with penalties for infractions had to be withdrawn because of opposition in Parliament.

The Government hopes that the use of metric units in the retail trades will increase in a progressive and spontaneous way with the help of the United Kingdom Metrication Board.

No progress has been made in highway road signs, including speed limitations. It seems that this change which directly involves the public and will require prior consultations before establishing a conversion program, will probably not take place until around 1985.

In the area of Legislation the Weights and Measures Act of 1976 (1976-11-22) gave the Government the power to gradually eliminate, by orders to be submitted in each case for the approval of Parliament, the use of imperial units in the various commercial sectors. This law removes the last major obstacle to achieving metric conversion.

On 1976-11-01 and 1978-04-27 the units of measurement regulations 1976 and 1978 became law (Statutory Instruments 1976 number 1674 and 1978 number 484). These regulations, which were proclaimed in accordance with the directives on the establishment of SI units from the European Economic Community, prohibit among others the use of a number of imperial units, such as the chain, the furlong, the nautical mile (UK), the cubic yard, the bushel, the dram, the cental, the inch of water, the ton-force, the knot (UK).

The United Kingdom is continuing to pursue metric conversion slowly but steadily, and this is



U.S. and Canadian fact-finders meet with U.K. Metrication Board 1979-10-18. Left to right: Charles Buckingham, president of the American National Metric Council; Jim Humble, director of the British Metrication Board; Bill Methven, Consumer Affairs Metrication Board staff; James G. Van Oot, metric coordinator, E.I. Dupont de Nemours & Company and chairman of the ANMC chemicals sector committee; and Paul C. Boire, executive director, Metric Commission Canada.

in accordance with the conclusions given in the United Kingdom Metrication Board's Annual Report for 1977/1978 as follows:

"The choice is not between imperial or metric. The facts of world trade, industry and technology mean that the use of metric units will increase. The 17 million or more young people already educated in metric will need to use their knowledge properly in adult life. So the choice we have is between completing the change to metric within the next few years or settling for an indeterminate period during which the inefficiencies and inconveniences of using the two systems side-by-side will grow. We believe it will be best to grasp this nettle firmly and to achieve the transition to metric in an orderly fashion."

*Going metric: Progress in 1974 (42 pages); in 1975 (35 pages); in 1976 (The final stage begins, 32 pages); in 1977/78 (32 pages). 6th to 9th Reports of the Metrication Board, H.M.S.O., London.

HORSFIELD (A), The introduction of SI units in the U.K. (Talk given at INSYMET 78 (Conference on metrology), Bratislava, 31 Oct. - 2 Nov. 1978). Texte reproduit dans NPL News (Teddington), No. 342, Summer 1979, pp. 12-15.

Conversion on schedule at St-Clair College in Windsor

Horst Meysick, metric coordinator for the 5 000-student St. Clair College of Applied Arts and Technology in Windsor, Ontario, reports that conversion is progressing as scheduled and will be essentially complete by the end of 1980.

The St. Clair metric conversion plan was based on the general sector plan for post-secondary non-university education, prepared by Sector Committee 10.03 in 1977. This provided the necessary guidance of the implementation of conversion at St. Clair.

The St. Clair metric conversion committee, which included the president and faculty members, determined and included in its plan the names of the persons responsible for implementation of the various conversion activities. This would help co-ordinate the conversion and facilitate the exchange of information among persons responsible. The college found the plan extremely useful in directing the energies of those involved.

Recognizing the key role that education and training have to play in successfully implementing Canadian conversion to SI, St. Clair follows the four-phase pro-

gram of guideline dates for metric conversion, namely, investigation, planning, scheduling and implementation recommended by Metric Commission Canada through more than 100 sector committees covering all the country's economy.

The St. Clair plan provides an activity breakdown of conversion activities in order to reach the objective within the time and money allocated.

Activity descriptions have been worked out in detail and conversion is being carried out in the following areas: standards, legislation and regulations, equipment, administrative systems, training, public awareness and plan management.

The St. Clair College activity breakdown identifies those activities which must be carried out to implement the necessary modifications in the institution's programs to keep them in phase with Canada's overall metric conversion program.

The model for the activity breakdown, which was provided by Metric Commission Canada, outlines 16 major activity areas. Sector Committee 10.03 and St. Clair College chose seven of these

16 activity areas as being pertinent to their sector. In those areas where Sector 10.03 and St. Clair are dependent on the decisions of other sectors (e.g. the area of 'measurement units'), the major activity area was not included in the activity breakdown.

The activity list is a listing of conversion activities expected to be carried out by the college. It has been developed directly from the activity breakdown. Expected duration of each activity and target dates for its completion are indicated on this list, as is the anticipated cost allowance required to complete each activity.

Mr. Meysick says the publication of the college plan has led to a marked increase in enthusiasm and to the real start of conversion at St. Clair.

For more information concerning conversion in this sector, please contact:

Mr. Dave Beckman, Chairman
Sector Committee 10.03
Director of Further Education
Services
Devonian Building
11160 Jasper Ave.
Edmonton, Alberta

John Stevens Scale Service
McLaughlin Road
St. John, N.B. E2L 3W3

EBM Cash Register
1031 Ste-Julie
Trois-Rivières

Equipement de Bureau
Joliette
837 Firestone Blvd.
Joliette, P.Q.

Bellavance Inc.
192, est, St-Germain
Rimouski, P.Q.

Montreal Cash Register Ltd.
2024, est, Mont Royal
Montréal, P.Q. H2H 1J7

Equipement R.D. Inc.
584, Place Trans Canada
Longueuil, P.Q.

Laval Kitchen Equipment
4490 Melrose
Notre Dame de Grace, P.Q.

Service des Balances
L'Estrie
900, sud, rue Wellington
Sherbrooke, P.Q.

Every Scale Repair Co.
35 Covington Street
Hamilton, Ontario
L8E 2Y4

Kitchener Scale Service
1 Adam Street, Door 3
Kitchener, Ontario

F.G. Bradley Co. Ltd.
550 Kipling Avenue
Toronto, Ontario
M8Z 5E9

Albert Berg Ltd.
1 Hafis Road
Toronto, Ontario

Exact Weight Scale Co.
1191 Crestlawn Drive
Mississauga, Ontario

Griffith Laboratories Ltd.
757 Pharmacy Ave.
Scarborough, Ontario

Toledo Scale Ltd.
5220 Creekbank Road
Mississauga, Ontario

Globe Slicing Machine Co. Ltd.
5 Charleston Road
Islington, Ontario

Avery Limited
Smethick, Warley
West Midlands, England

Metro Equipment Co.
(Accu-Weigh)
Santa Clara, California,
U.S.A.

List of Canadian Distributors for Sanitary Scale Company
Belvedere, Illinois
U.S.A.

Delorme & Primeau
9413 Boulevard
Lajeunesse
Montreal, Que.

Edmonton Butchers & Packers Supplies
11434-120th Street
Edmonton, Alberta

Libra Scale Co. Ltd.
6984 Palm Ave.
Burnaby, B.C.

City Wide Scale Co. Ltd.
30 Baywood Road, # 14
Rexdale, Ontario

Alliance Cash Register
27 Tabor Road
Rexdale, Ontario

Berkel Products Ltd.
1232 Crestlawn Drive
Mississauga, Ontario

Digital Scales of Canada
1 Hafis Road
Toronto, Ontario

Elpack Limited (Bizerba Scales)
41 Horner Avenue
Toronto, Ontario

Hobart Manufacturing Co.
190 Rainside Road
Don Mills, Ontario

Tokyo Electric Canada Ltd.
57 Galaxy Boulevard
(Unit 4)
Rexdale, Ontario

Marketex Western Ltd.
204-2665 Shaughnessy St.
Port Coquitlam, B.C.

ESI Corporation,
2661 Tuohy Ave
Port Coquitlam, B.C.

Western Refrigeration & Butchers Supplies
1231-36th Ave. N.E.
Calgary, Alberta

List of Canadian Distributors for Stimpson Computing Scale Co.
P.O. Box 4318
Louisville, Kentucky 40204

Sanitary Products
99 Blackmarsh Road
St. John's, Nfld.

Amalgamated Business Equipment
80 Sackville Street
Shediac, N.B.

Poirier Equipment Inc.
1280, est, rue Ontario
Montreal, Que.

Nella Cutlery Service
356 Dosco Drive
Stoney Creek, Ontario

Ed Shillington Ent.
52 Carrier Drive
Rexdale, Ontario

York Store Equipment
158 Dalhousie St.
Ottawa, Ontario

E.W. Bone
5 Charleston Road
Islington, Ontario

Accurate Scale Co.
1444 Logan Avenue
Winnipeg, Man.

Refrigeration Installations
106 Ave. "B" South
Saskatoon, Sask.

Butchers & Packers Supplies
424-7th Ave. S.E.
Calgary, Alberta

Edmonton Butchers & Packers
11434-120th Street
Edmonton, Alberta

Scale Shop (1973) Ltd.
757 E. Cordova St.
Vancouver, B.C.

Scales companies

Here is a preliminary list of companies producing or servicing scales approved by the federal department of Consumer and Corporate Affairs for use in retail food stores. Companies wishing to appear on this list should contact: Ben Wassink, Sector Plan Manager, 3.10, Metric Commission Canada, 240 Sparks Street, Ottawa K1A 0H5

Movers on the move

The Canadian moving industry, which forms a part of Sector 1.04, Road and Urban Transport, plans to introduce metric tariffs in 1980-04. In preparation for this event, a series of seminars for industry employees is being given from coast to coast.

Geoff Barrett, executive vice-president of the Canadian Association of Movers and Dave McConnell, executive vice-president of the Canadian Household Goods Carriers' Association, are personally conducting these seminars. They started in St. John's, Newfoundland, in September and will finish the program of 16 seminars on the west coast this coming February.

In addition to this special project, Dave and Geoff serve respectively as Chairmen of Sector 1.20, Working Group on Tariffs and

Sector 1.30, Working Group on Transportation Packaging.

Chamber of Commerce poll

The following question was put to some 550 participants at the Annual Meeting of the Canadian Chamber of Commerce held in Vancouver 1979-09-23/25.

The metric conversion program in Canada should: be accelerated, proceed at current rate, be slowed, be abandoned?

The answers were:

Be accelerated	11%
Proceed at current rate	50%
Be slowed	30%
Be abandoned	9%

Information to retailers for scales changeover

In brief

The Canadian retail food industry, the scale industry and other related groups working together on the Working Group on Scales in the Retail Food Industry, have prepared a plan for metric conversion of retail food scales and the use of the kilogram in the sale of weighed products such as meat, produce and cheese. This plan was approved in 1977 as part of an overall national coordinated program to adopt the SI metric system in all aspects of the Canadian economy.

The objective of the retail food scales plan is to make the transition easy for consumers and retailers and to keep costs and inconveniences to a minimum for all concerned.

District committees consisting of local members of the retail and

scale industries with participation from consumer organizations have prepared detailed schedules for the conversion of scales in each area of the 20 districts in Canada. Regulations have been drawn up based on industry recommendations, to ensure that the schedules are fair and equitable to all retailers.

Three cities were selected by the retail food industry to start the conversion of retail food scales. They are Kamloops, B.C., Peterborough, Ontario, and Sherbrooke, Québec. The rest of the country will begin the changeover, with each area converting according to schedules decided upon by the district committees. By 1981-12, retail food scales will weigh your meat, produce, fish and cheese in kilograms.

Conversion methods

Revised summary of conversion methods and cost estimates, based on scales in good condition, as well as replacement costs, for the most popular retail scales types. To get actual cost estimates, which may sometimes involve repair costs, contact scale service organizations. (See yellow pages in your phone book, or contact the scale manufacturer.)

Cylinder Scales

Metric charts of weightband conversion kits will be available for a number of Toledo, Sanitary or Globe-Stimpson models. (With a weightband conversion there will be no computing section). Cost range: \$200 to \$400 for a new chart, \$60 to \$80 for a weightband, for a scale in good condition. If repairs are required at the same time, the total cost will be more. Check on availability and costs with these companies and with independent scale service organizations. Berkel and Hobart will not produce cylinder scale conversion kits. Store owners whose present scale cannot be converted, may try to obtain a second hand convertible scale. Since it may take time to find one, take action soon.

Scale industry surveys indicate that conversion kits are available for most of the following types:

Globe Stimpson - Model 81 (F) (A) (D)

Sanitary - Model V12

Toledo - Model 1100 Series
1051, 2, 3, 4
1361

Digital Scales

Method: Modify electronics, change bezel
Conversion costs: readily convertible; usually as part of service contract.
Older models: \$300 to over \$1000.

Projection Scales

It appears that many projection scales cannot be economically converted; check with your supplier about your scale and on availability of conversion kits. Some scales may have a long lead time. If convertible, replace micro-chart.

Conversion cost: \$150-\$250.
Replacement cost: \$900 to \$1800.

Fan Scales

Many fan scales can be converted.
Conversion cost: \$60 to \$150 depending on method.
Replacement cost: \$400 to \$500.

Label Printers

Method: Modify printing mechanism.
Conversion cost: \$100 to \$200.
Replacement cost: \$1500 to \$2000.

Dial Scales

Method: Replace dial and spring if three revolution scale.
Conversion cost: \$75 to \$175, depending on method.
Replacement cost: \$300 to \$400.

Summary of metric conversion plan

Retail Scale Metric Conversion Plan 3.10 - Working Group on Scales in the Retail Food Industry

The Working Group consists of representatives from industry associations (Retail Council of Canada, Canadian Federation of Retail Grocers, Retail Merchants Association of Canada, Canadian Grocery Distributors Institute), major corporate supermarket chains, voluntary groups, independent food retailers, food wholesalers, scale manufacturers and distributors, scale service organizations, consumers, the federal Department of Consumer and Corporate Affairs and Metric Commission Canada.

The plan prepared by this Working Group deals with the adoption of metric units in the sale of random weight products in the retail food industry and the associated conversion of scales to the kilogram.

The Working Group has come to the conclusion that a coordinated and planned conversion program will greatly reduce costs and inconvenience to retailers and consumers. The plan called for the conversion of retail food scales to commence during 1979-07, coincident with the conversion of Postal Tariffs. It started in Peterborough, Ont., Sherbrooke, Qué., and Kamloops, B.C., and is to continue in 1980-01 in other areas of Canada, to be essentially complete by the end of 1981.

The plan suggests that conversion be done by market area, so that all retailers in an area can be converted in the shortest practical time span. Detailed schedules were produced on a district basis by district representatives of the parties involved, within the guidelines of the scale conversion plan. These district committees were formed early 1978.

Also included in the plan are

information programs directed at the retail food trade and at consumers, to assist in a smooth transition.

The Working Group has adopted the kilogram and the 100 g as the retail units of sale. Consequently, all computing scales will be based on this unit.

The conversion of retail scales is subject to special tax measures that relieve some of the burden on the retail food industry. These measures concern conversion kits for existing scales as well as replacement metric scales. Details can be obtained from your association, Revenue Canada or Metric Commission Canada. In summary these measures are:

Conversion Kits: parts are federal sales tax exempt, and if not made in Canada, duty exempt. The costs can be expensed in the year they are incurred.

Replacement Scales: New metric retail scales to replace existing avoirdupois scales are subject to half the normal federal sales tax rate. They can be written off in the year they are purchased. (Check also scales designed for ready conversion, which may be eligible too).

These measures are in effect from 1977-04-01 until 1981-07-01.

The Working Group recommends that the ordering of scale conversion kits or replacement scales should be after a thorough analysis. The analysis should consider actual scale needs, the costs of labour, costs of operator errors, annual weighing volume in dollars, and maintenance cost. This analysis should enable the scale owner to decide whether replacement or conversion is the most economical alternative, and in case of replacement, which type of scale is the most suitable for a particular application and the best time to purchase it. Quotes from

different sources may be sought on conversion as well as replacement costs.

Key Events

Key events in the implementation of this plan are:

- 1975-01 Requests for tax and duty relief on the costs of scale conversion.
- 1975-03 Unit and price range decisions.
- 1977-04 A decision on the requests for tax and duty relief from the federal government.
- 1977-10 Decisions on the request for tax relief from provincial governments. Conversion kit estimates available.
- 1978-03 All district committees established.
- 1978-04 Initial orders for cylinder scale conversion kits received and scale industry production starts.
- 1978-09 District schedules available.
- 1978-10 Joint announcement of Canada Post tariff conversion plan and the retail food scale conversion schedule.
- 1979-06 Public awareness and personnel training programs implemented in first areas.
- 1979-07 Scale conversion starts in the first three areas: Peterborough, Ont., Sherbrooke, Qué., Kamloops, B.C.
- 1981-06 Tax and duty relief measures end.
- 1981-12 Food retail scales in Canada predominantly weigh in kilograms.



Second-hand scales

The scale industry monitoring reports indicated that some retailers will not be able to convert their present scales. Although some of these retailers are buying a digital scale and others are reportedly switching to pre-packed products, disposing of their scale, there are

many who cannot do either. Members stressed that for the success of the scale conversion program it is necessary that a low cost conversion is available for these retailers, enabling them to change to metric weighing without having to buy a digital scale, a need confirmed also by some of the District Committee reports.

It was therefore suggested that second hand convertible scales, which are traded in by the larger stores, be made available for sale to these smaller retailers. They should contact local scale dealers and service organizations and make their needs known.

Kits

New metric scales or conversion kits for old scales are now available from various scales sales or service companies.

Food usually comes in kilograms and grams

You too can measure up



A detailed schedule has been prepared for scales conversion in the 20 districts of Canada you can see on this map.

Report on legal units in European Economic Community

This article is adapted from a paper given by Dr. A. Strecker, director of the Federal Republic of Germany Ministry of Economics, at a recent standards meeting in Geneva, Switzerland on legal units in the European Economic Community, especially the Federal Republic of Germany.

The introduction of the International System of Units (SI), recommended in 1960 by the Conférence Générale des Poids et Mesures, is now rooted in the legislation of many countries. The changeover period for the units which will no longer be used has come to an end. Much experience has been gained regarding the practical aspect of the introduction of SI units.

In most countries, the use of metric units has become compulsory. Forty-nine countries are still in the conversion phase or have decided to convert. In Burma, Malawi and the United States, the use of metric units is voluntary and they must be accompanied by conventional units.

It is our intent to briefly describe the experiences related to the introduction of SI units. This description is based essentially on the situation in the Federal Republic of Germany, on EEC Directive 76/770 and on EEC Directive on measurement units which is presently being developed by the Council of Ministers. As for the Federal Republic of Germany, legislation on measurement units (1969) stipulates the exclusive use of SI in trade operations and for official purposes.

General Use of SI Units

As it is impossible to impose the required conversion by force or overnight, new units can only be introduced after certain changeover periods. Also, these conversions are very costly, and much time is needed before the advantages of standardizing measurement systems on a universal basis become apparent. On the other hand, the conversion process must not lag unduly if doubts and confusion are to be avoided.

One specific task is the introduction of SI units in Anglo-Saxon countries. As opposed to those which have been using the metric system for a long time, Anglo-Saxon countries had to proceed to a synchronous conversion of units of length and mass. Furthermore, conversion involved getting acquainted with the multiples and sub-multiples of the units. In the United States, *go Metric* is a ten year program whose extent is almost inconceivable to Europeans and which is far from being completed at present. In Great Britain, the conversion of currency which took place at the same time has weighed down the English people even more.

The important task of developing regulations for those areas not covered by legislation rests upon national and international standardization. For example, ISO 1000 (1973) and DIN 1301 play an important role in the application to specific industrial facts of the main decisions of the metric convention.

SI and Education

It is the responsibility of the educational system, in particular, to introduce the new units and thus allow future generations to function in one coherent system. The specific advantages of SI, its preciseness and simple use, should entail marked success in the field of education. In the Federal Republic of Germany, it was wise to turn to textbook publishers in order to ensure that the new units are adopted at that level with a minimum of delay. Thus, we may be sure that all students will be introduced to SI units as soon as they begin to study science. A report submitted to Congress in 1970 by the Minister of Trade stresses the great

importance of education in the framework of the United States' *go Metric* program and advances the following recommendation:

"That early priority be given to stimulating American school children and the public at large to 'think metric'."

Unlike schools, the universities in the Federal Republic of Germany are behind schedule with regards to the introduction of SI. At the university level, textbooks play a lesser role than in schools. The imparting of knowledge is the responsibility of lecturers, who for the large part, always use the cgs system. This system is part of a long tradition in the scientific field and utilizes a limited number of basic values. Even the Bureau International des Poids et Mesures indicates good reasons for using other units and unit systems in certain fields of scientific research, especially with respect to the theoretical aspects of physics. Scientists tend to follow the example of the academic world and do not readily adopt SI. However, one need only wait a few years for the growth of a new generation before SI becomes the exclusive system in use.

Unlike the trade and public sectors, conversion in the field of education in European countries takes place on a voluntary basis, with no legal constraints.

SI and Industry

The conversion to SI in industry has brought about problems with the following units:

Force: the kilopond (kilogram-force) is replaced by the newton. Thus:

$$1 \text{ N} = 1 \text{ kg} \cdot \text{m} \cdot \text{s}^{-2} \approx \frac{1}{10} \text{ kp}$$

One may suppose that the continuous implementation of SI creates problems owing to the fact that the unit kp, defined as "the ponderal force of 1 kg in the gravitational field of the earth", describes a force which anyone can exert, any number of times, by lifting such a mass. On the contrary, up until now, a force of 1 N does not evoke much and it is hard to explain to students.

Pressure and Stress: the atmosphere (or torr) is replaced by the pascal (or bar). Thus:

$$1 \text{ Pa} = 1 \text{ N/m}^2 = 10^{-5} \text{ bar} \approx 10^{-5} \text{ atm}$$

Even nowadays, the new unit pascal is still considered to be unknown. On the other hand, the bar is a legal and permanent unit in the European communities, and it has proven itself in practice (i.e. devices for measuring excessive pressure). Although the trend may be to eliminate the bar after prolonged changeover periods, we do not agree with this tendency.

Power: Motor power is measured in kilowatts.

At the industrial level, the greatest lack at present is that of specific SI derived units to replace the poise, for example, used to measure dynamic viscosity or the stoke, used to measure kinematic viscosity. In order to enforce the amended EEC directive, a changeover period lasting until the end of 1985 is proposed.

All in all, no major difficulties seem to stand in the way of the introduction of SI in the Federal Republic of Germany.

SI and Medicine

1) Measuring Pressure. This is done, for example, in order to determine blood pressure or pulmonary functions in case of anesthesia, tonometry or osmotic troubles. The SI unit for pressure is the pascal (symbol: Pa). Presently, the following units are still in use:

- for measuring blood pressure: mmHg



American National Metric Council and Metric Commission Canada fact-finders meet with officials from the Federal Republic of Germany in Bonn, 1979-10-15. Left to right: G.M. Meixel, Ingersoll-Rand, director of ANMC; J.T. Blackburn, Jr., supervising engineer of standards, Phillips Petroleum, director of ANMC; Dr. Draht and Prof. S. German, Technical University of Braunschweig; Klaus-Peter Schulz, German Institute for Standards (DIN); Dr. A. Strecker, director of the Federal Republic of Germany Ministry of Economics; James G. Van Oot, Metric coordinator, Dupont Ltd.; Charles Buckingham, president, ANMC; Dr. Roesner, federal West Germany Ministry of Economics; Paul C. Boire, executive-director, Metric Commission Canada.

- for tonometry: Torr
- for osmosis: cm/WS (= head of water)

In the Federal Republic of Germany, the gauging of devices used for measuring pressure, as well as tonometers, is compulsory. This involves the use of the legal unit.

2) Heat. The physical amount of heat is measured in kilojoules (symbol: kJ) and not in calories (symbol: cal).

3) The unit val is no longer used to indicate the equivalent amount. Its conversion equations are given in mole. Specialized organizations, both national and international, are now examining the need for

such a measurement to represent equivalent amount. If such a need is proven to exist, it could be expressed by the use of the symbol mol.

4) Radiology

— the activity of a radioactive source is no longer expressed in curie (Ci) but in becquerel (Bq).

— the ion dose is no longer expressed in röntgen (R), but in coulomb per kilogram (C/kg).

— the dose of absorbed energy is no longer expressed in rad (rd), but in gray (Gy).

— the dose equivalent is no longer expressed in rem (rem), but in

joule per kilogram (J/kg).

Note: Special name "sievert".

It is expected that conversion will be completed by 1985 in view of the fact that many present-day devices are gradually being put out of service.

The use of SI in the medical field is the subject of a detailed study entitled *The SI for Health Professions* and published in Geneva in 1977 by the World Health Organization (WHO). It also contains the conversion equations. In 1977, WHO made a general recommendation in support of the conversion to SI units, without of course scheduling target dates.

They say it with posters



The grades four and five at Elizabeth Gardens Public School in Burlington, Ontario, have been studying the metric system of measurement in math, science, music and art. One of the objectives of the art unit was to tell the other individuals in the school to think metric through a poster. Space does not allow printing here all 60 excellent posters the *Monitor* received but here are a few samples.