



Metric monito

Vol. 7, No. 10

Metric Commission Canada

Return postage guaranteed, 240 Sparks Street, Ottawa K1A 0H5

1980/12

ISSN 0700-2408

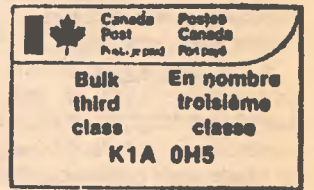
Industry Canada
Library Queen

MAR - 2 2004

Industrie Canada
Bibliothèque

K1A 0C9

103005435
CLEANOR MULDOON
INQUIRY SERVICE
INDUSTRY REL CCA
INFO & PUB REL ZONE 4
2ND FLOOR
HULL P



Canadian electrical utilities report on progress

The following report was prepared in October by the sub-committee on communications of Sector Committee 3.06, Electric Power.

Canadian electrical utilities are gradually incorporating metric units into all of their day-to-day activities. The plan developed under the banner of Metric Commission Sector 3.06 is the guide for individual utility plans. During the early stages of planning, starting in 1974, the sector committee met about six times a year. They now meet about twice a year to monitor progress and discuss strategy for coping with the remaining problems. Through liaison membership, the electrical utility sector co-operates with the Electrical Manufacturers' sector (3.01) and with the Power Generation sector of the American National Metric Council (2.07).

The sector plan for the electrical utilities set a target of 1980-02 as "SI-Day". By this time, the Canadian utilities were to be working to the following general principles:

- Conversion of most activities, to a degree compatible with the status of the external economic and technical environment;
- Development of a state of readiness to convert any remaining activities as soon as external events make these conversions practical.

For the most part, these objectives were met. Complete conversion to SI metric is being inhibited by the lack of a full range of supplies converted to metric modular sizes which use metric fasteners. Even though new metric standards exist, it is still difficult to find hardware, for example, or plywood sheets made to these

new standards. The public environment in which the utilities operate is less enthusiastic for SI units than it might be, as evidenced by the postponement of the use of kilograms in the grocery stores.

Internal systems in the utilities are changing, nevertheless. In-house standards are now about 70% converted. More than 75% of engineering computer programs can handle metric input and output, and about 80% of design effort is now in SI units. It is still necessary, chiefly because of the supply of equipment made in the U.S.A., to incorporate inch-

designed machinery into otherwise totally metric plants.

A job which takes considerable time and material is the conversion of the instruments in existing operating plants. Choices must be made between leaving the existing instrumentation intact, even though operating reports may have become metric, and gradually converting the gauges and transmitters to SI units. A dual system of measurement is then unavoidable for the duration of the changeover. The conversion of operations is about 70% complete across the utilities. Employee awareness and training programs

were virtually completed in 1979.

Two other aspects of life in the utilities are changing, though these are not strictly matters of metric conversion. These are all-numeric dating and the use of ISO-sized paper. In most utilities, it has been decided that when only numerals are used for dates, they must be in the pattern described in CSA standard Z234.4 (year, month, day). Many forms have been changed to fit the new standard. Ontario Hydro, to make its usage uniform with that of the provincial government, is adopting ISO sizes of paper for drawings

Conversion is easy for Oshawa contractor

Work on one of Canada's first all-metric housing projects is progressing virtually problem-free.

More than 125 units at the Sun Valley housing development in Oshawa, Ont., have been completed since 1978, and 200 more will be built by 1983.

The builder, Kassinger Construction Ltd. of Oshawa, decided to go all-metric because, as general manager Alex Hillebrand puts it: "We thought it would be crazy to start a five-year project using imperial measurements and finishing it with metric measurements."

A key consideration in going metric was the problem that home owners would eventually have in obtaining imperial-sized materials. "Plywood and other materials will not be available in imperial measurements in ten years."

Obtaining metric materials has not posed any trouble for Hillebrand. He says it takes about a week to get metric materials in the Oshawa area, a situation he is happy to live with. In comparison, it takes a day to obtain imperial-sized materials.

He says the biggest drawback to using metric materials is that it forces subcontractors to switch back and forth between metric and imperial, because other Oshawa general contractors are still on the imperial system. He notes that framers in particular are bothered by having to switch back and forth constantly.

While the subs had strong reservations at first about taking on metric work ("They did not like having to go out and buy new things, such as rulers"), he says they made the transition easily

and now they wish all house-builders would go metric.

"If they could stay on metric, they would love it. They consider metric to be easier."

As for house buyers, they "do not care which system of measurement is used." For one thing, his salesmen describe a house in imperial units for the benefit of prospective buyers, even though the construction is metric.

The city of Oshawa was supportive of his company's move to the metric system. He says local officials were a source of encouragement, noting that both the city and the regional municipality of Durham carry out all local road projects using metric dimensions.

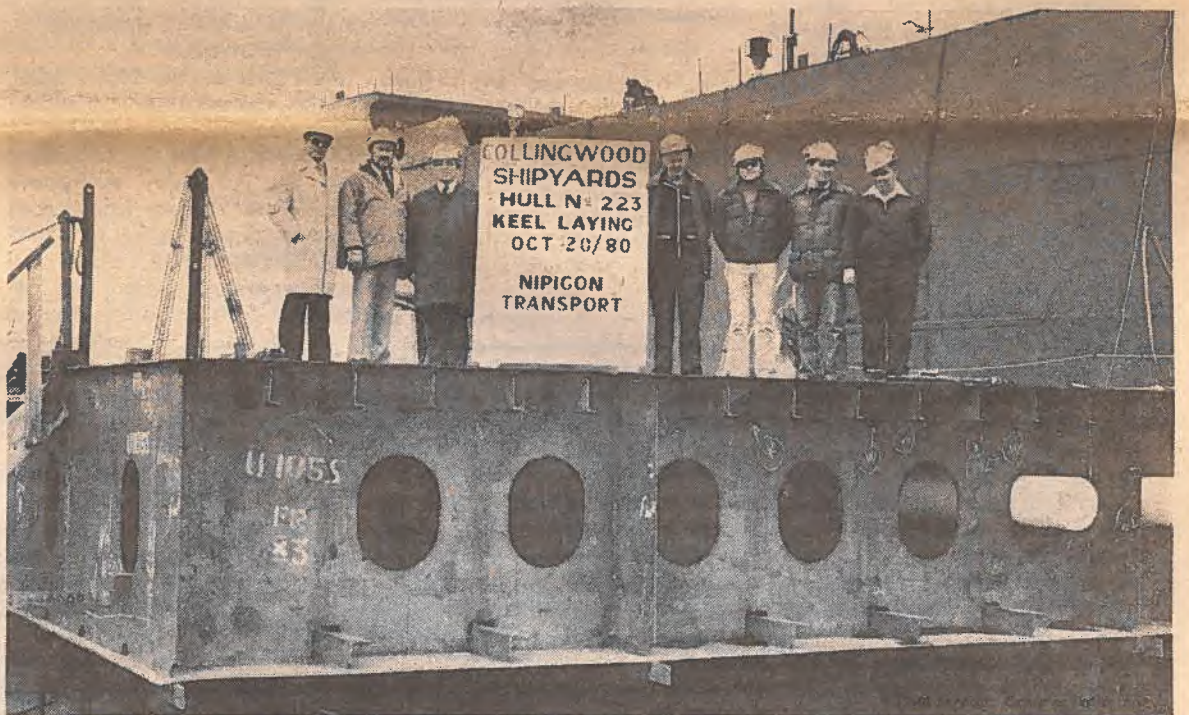
He says contractors should learn to accept metric because metric materials eventually will be the only ones available. The day is coming when construction materials will be prefabricated in standardized sizes in factories, and "these materials will be made in metric dimensions, not imperial."

Although he is a strong supporter of the metric system, Hillebrand says that "after a certain age," switching over to a new system of measurement becomes difficult. But he emphasizes that using metric sizes is "very easy; there are no two ways about it."

Nor is he against the use of traditional measurement expressions. "Even if you have metric for 100 years in Canada, a '2 by 4' will still be a '2 by 4'. Why call it anything different? It would be foolish to describe it in metric sizes."

Reprinted with permission from Heavy Construction News.

Collingwood builds in metric



Collingwood Shipyards in Ontario, a division of Canadian Shipbuilding and Engineering Limited, laid the keel of a 222 m fully metric bulk carrier, Hull 223, last October. The ship, built for Nipigon Transport, will operate under the Canadian flag and is the first vessel to be built to metric dimensions by Collingwood Shipyards located some 160 km north of Toronto. Collingwood chief designer G.A. Van der Net says the vessels to be built after Hull 223 will all be in metric dimensions, a self-unloading ocean-going bulk carrier for Canadian owners. Other Canadian shipyards have built metric vessels for Canadian and foreign owners for the last three years. Some yards have used metric as far back as fifteen years ago. Seen here at the keel-laying ceremony are shipyard owners and classification company representatives.

Toy industry well along road to implementation

Metric conversion in the toy industry has really been a non-event says W. Frank White, president of Whitman Golden Ltd., Cambridge, Ont., Chairman of the Canadian Toy Manufacturers' Association and chairman of MCC Sector Committee 7.43, Toys.

"A parent will buy his child a doll because of its appearance or price/value relationship, not because it is so many inches or centimetres tall." In other words, most toys are not measurement-sensitive. This too helps explain why metric activity among the 140 Canadian toy manufacturers and

importers represented on Committee 7.43 has been marginal.

Most of the companies are too small to have any clout with suppliers even should they find it advantageous to order raw materials in metric units. Where metric impacts most is in package sizes and description of the contents.

"The industry as a whole is well along with the implementation phase of conversion" adds White whose own company makes jigsaw puzzles, board games and colouring and story books.

The sector plan, approved in 1979-09, called for metric conver-

sion of the toy industry by January 1981 and early appointment of company metric conversion officers. Soft metric conversion for existing designs was also approved at that time for the industry.

A sector plan summary leaflet contains a bar chart and an abbreviated description of the sector plan highlighting key events in the metric conversion of the toy industry. To obtain this plan summary write to:

Metric Commission Canada
Box 4000
Ottawa K1S 5G8.

Alberta columnist addresses metric opponents

The following article by columnist Elinor Florence appeared in the Red Deer Advocate in August and is reprinted with permission of the author.

I'm still a bit confused as to why anti-metric opponents are making such a row over something which has been planned for several years and is well under way.

Is it the expense of metric conversion that is the main stumbling block to its acceptance? Is it the time and trouble necessary to make each conversion? Is it the principle of the thing — that conversion was not voted upon?

Or is it simply that some people enjoy pretending that they are hard-done-by and like to make nuisances of themselves? I suspect the latter.

As far as the expense of metric conversion is concerned, certainly it's an expensive proposition. Anything that takes place on a national scale must be. Bear in mind, however, that Canadians spend millions of dollars on pursu-its which have less significance for the majority — and most of us don't demand a plebiscite on

every item funded by federal tax money.

I would also suggest that some metric opponents are not as conscious of public expense as they might be, else why would they do public damage to road signs to the tune of \$100 000?

The final word on the expense of metric conversion, though, must be that having come this far, stopping conversion would be a total waste of millions of dollars. Most of us who are prepared for conversion would be far more upset by the idea that our money to date has been spent in vain.

Concerning the difficulties involved in converting to metric on a personal basis, I sympathize with those who cannot do so — but feel slightly embarrassed that anyone would admit to being quite that ill-equipped mentally to perform the simplest mathematics.

Government as well as private industries have endeavored to make conversion easy for everyone. There are several tonnes of metric charts, rulers, converters and tools floating around, many of them distributed free of charge.

If someone is truly unable to do elementary multiplication and division, any child on the street would probably be able to help, as the metric system is now being taught in schools.

I'm told that it's harder to learn a new language after the age of 60, and more difficult to adjust to new situations.

Nevertheless, I can't believe that someone who has been balancing a budget or running a business for that long forgets all at once how to do maths. In fact, I've heard several elderly people say that they don't know what all the fuss is about.

It's true that metric conversion was not voted on. So what? It's not practical to hold a public referendum on every issue, and those who are concerned about public expense should be aware of this. And it's obvious that in this case a public referendum is not needed.

Despite the paranoid struggles of a few scattered groups and individuals to resist the inevitable, metric conversion has taken place quite smoothly so far. Even the Canadian Cattlemen's Association, last bastion of small-c con-

servatism voted last year to adopt the metric system.

I find especially objectionable the efforts made by metric opponents to link the metric system with a) the French and b) the devil. The metric system is currently used by 87* countries in the world. It has nothing to do with French-Canadians, nor does it have any religious significance whatsoever. That is what is meant by grasping at straws.

Finally, those who would say their rights as citizens are being undemocratically denied should remember that there were legal channels open several years ago

which could have been employed, long before conversion began.

Everyone was informed of metric conversion then, and warned that it was on the way. That would have been the time to organize and to protest, although I believe the majority would still have gone with metric. Now metric opponents are too few and too late to make a difference.

Let's hope for the sake of the rest of us they'll be gracious losers, but somehow I don't think they will.

*Editor's note: It's even more than that — 150 countries.

Ontario conversion report

At the sixtieth meeting of Metric Commission Canada held in Hamilton, Ontario, 1980-11-5/6, a report was given on the progress of metric conversion within Ontario Government ministries and agencies.

All provincial legislation containing measurement-sensitive clauses has been identified by the ministries involved and the relevant acts converted. Twelve ministries including Environment, Management Board, Civil Service Commission, the Ontario Educational Communications Authority, Inter-governmental Affairs and Natural Resources have indicated that they have completed their internal conversion programs.

Ontario Hydro has advised that its metric conversion goals have been fulfilled.

The Ministry of Transportation and Communications have completed their program and have closed their metric office effective 1980-10-01. Metric conversion is now considered a normal day-to-day activity by this department.

Reports received from the groups involved, indicate that formal training of present employees is in the process of being completed. On-going training for new employees will be implemented as the need arises.



Utilities

(From page 1)

and correspondence. Manitoba Hydro has adopted ISO sizes for drawings, and B.C. Hydro the ISO A1 size for maps.

New projects by Nova Scotia Power Corporation, designed totally in metric units, include the Gisborne 3.5 MW hydro project and the 17.8 MW Annapolis Tidal Power Project, whose completion is scheduled for 1983. Nova Scotia's new Lingan coal-fired generating station, with two 150 MW units is the first thermal generating plant in Canada to be designed, constructed and fully operated in the metric system. Commercial operating of the second unit began on 1980-06-05.

New Brunswick's Point Lepreau nuclear station will be 100% SI.

Hydro Quebec has designed its Manic 5 P. A. hydraulic power plant (1 GW) in SI units and has already begun construction of the temporary facilities in metric units. All new substation designs are in SI. Metric angles are being used in the third James Bay transmission line. The James Bay project itself was designed in SI.

At Ontario Hydro, a study of the contracts written for the Darlington nuclear project showed that they are 75% metric. The remainder are still imperial because of the product or post-design practice. SI information is being used in design as much as possible. Transmission Systems Division is designing all new towers and stations using metric products where possible. So far, only some of the hard-converted metric structural steel, catalogued by the manufacturers, is actually available. Substitution of other sizes is therefore negotiated, in the meanwhile, when necessary. Fasteners are still imperial. Metric replacements for standard designs are being scheduled now. Design details show alternate use of both imperial and metric fasteners.

Manitoba Hydro designs all new generating, terminal and distribution stations in metric. One-third to one-half of purchasing dollars are spent on metric materials while 70% of measurement-sensitive specifications are expressed in SI (Imperial) units.

Metric at Tri-graphics



This custom-built mastermailer with metric capability was designed by Bell and Howell for the Ottawa family-owned printing firm of Tri-graphics and installed in October 1980. Gilles Clouthier (l) and Michelle Raglin demonstrate the uses of the \$100 000 machine, capable of handling up to 6 250 envelopes per hour, including ISO metric sizes.

Completion by province

Completion of Activities in Sector 3.06 Plan as of 1980-03-31


Utility	Activity Completion
Manitoba Hydro	97%
Hydro-Quebec	78
Ontario Hydro	76
Alberta Power Ltd.	74
The Yukon Electrical Co.	74
B.C. Hydro	74
Saskatchewan Power Corp.	71
Nfld. & Labrador Hydro	68
Nova Scotia Power Corp.	64
Maritime Electric Co. Ltd.	63
Calgary Power Ltd.	61
City of Calgary E.S.	60
New Brunswick E.P.C.	53
Newfoundland L & P	45
Edmonton Power	42
Weighted mean for sector	75%

Saskatchewan Power Corporation has scheduled the conversion of natural gas billing to cubic metres so that it will fall at a different time from a planned rate increase. B.C. Hydro and Power Authority, however, now bills gas in units of 100 MJ.

The monitoring of progress so far is carried out periodically, with data collected on the progress on each important activity in the

Sector 3.06 plan. Fifteen utilities respond regularly, as shown in the table. Present indications show that monitoring and co-ordination of progress will probably not be required after the middle of 1981. At that time, the only remaining work should be the gradual assimilation of new metric-converted products into designs and inventory.

Use metric...for good measure

 Metric Commission Canada	Commission du système métrique Canada
METRIC MONITOR Published by Metric Commission Canada Box 4000 Ottawa, Ontario K1S 5G8	Articles appearing in the <i>Metric Monitor</i> may be reprinted without permission but suitable credit must be given. Please advise Distribution Manager of all changes of address. The opinions expressed in the <i>Metric Monitor</i> are not necessarily those of Metric Commission Canada. Circulation: 130 000
Chairman: D.R.B. McArthur Executive Director: P.C. Boire	

MOVING? LET US KNOW ABOUT IT

Name _____

New Address _____

Postal Code _____

ATTACH PRESENT LABEL HERE

Mail to: Distribution, Metric Monitor
P.O. Box 4000
Ottawa, Ontario
K1S 5G8

Those who try it, like it

The following was prepared by the Public Awareness Sub-Committee on Construction (PASCON) made up of volunteers from the construction industry sector.

The longer the transition period to metric measurements, the more the switch is going to cost.

And those who have made the change in good faith are beginning to get angry and argue that it's time the government legislated to enforce metric construction.

Don Bracken, operations manager of Nelson Manufactured Homes, a division of Nelson Lumber Co. Ltd., says: "Personally, after five years of this, I think the government should legislate. Those who haven't converted yet aren't going to until they're forced."

Nelson Manufactured Homes has totally switched the production line in its Lloydminster, Alberta, plant to hard metric dimensions.

Bracken explains this meant a complete redrawing of more than 60 plans for 1979 home designs and shop drawings. Some new equipment and retooling was also necessary.

He says the switchover went without a hitch. The company spent a summer preparing for the change and then "we did everything simultaneously, so we were never doing conversions back and forth; we went totally metric."

He says even their sales brochures are in metric and "there's been no problem," dispelling the myth that the public isn't ready for metric yet.

Bracken explains the manufactured homes are sold to home owners and contractors. The company ships its product from Winnipeg to the West Coast and into the Yukon and Northwest Territories.

He says the company is saving on drafting time working in the metric system, and the man on the erection site is making fewer errors because he's just having to add multiples of 10 and 100.

The only problem has been caused by the reluctance of others in the construction field to switch. "Our retail lumber operation is having to carry dual inventories," explains Bracken. "One is for our retail operation which is almost completely imperial and one for our manufacturing section which is metric." Internal costing is all done in metric, but retailing is calculated in imperial.

- The company is saving on drafting time and the man on the erection site is making fewer errors because he only has to add multiples of 10 and 100.

We've been left in a twilight world, he says. "The others know metric lumber is available, they're just resisting as long as they can."

Metric is here to stay, he says. "Our only second thought is whether we weren't a year or two early." But he says the cost of switching tomorrow will be more than it was last year. And Nelson is enjoying the competitive advantage of having substantially reduced the number of different sizes for a single component.

Merv Ellis, administrator of the Alberta Construction Association, explains this is one of the side benefits of hard metric conversion. "When the sizes of products are being changed to metric dimensions, manufacturers are able to rationalize and reduce the number of standard sizes."

The reduction in numbers of sizes will also ease supply problems for the contractor, says Ellis.

"With so many sizes on the market, it was almost impossible to interchange products. If you ran out of one kind of hinge you couldn't use a different manufacturer's product, because the holes would probably be drilled in different places. Now products will be more interchangeable, and the inventory requirements for suppliers will also be reduced."

- Even our sales brochures are in metric and there is no problem dispelling the myth that the public isn't ready for metric yet.

Windows are a prime example of the advantages offered by metric, says Ellis. "Prior to the metric system, there were 1 500 stock window sizes; the goal of the window manufacturers is to reduce this to 150.

Chantecler Products, a division of Campeau Corp., Ottawa, has changed its product line to metric, including windows, awning windows, wood slider patio doors, stairs and roof trusses.

Claude Lortie, managing director, explains the company switched in order to standardize sizes. "There was no standard for windows in imperial. Our awning window was 36 1/8 x 43 1/2 in. Most windows were around 48 in. but not exact. Now we have an even size of 1 200 mm."

He says there was no problem with the change once the staff had become familiar with the system. "All our people, foremen, technical people, went to Algonquin College in Ottawa for metric training. All our plans are in metric, and our people in the shops are very happy with it.

"Everyone was supplied with metric tapes, and now they are delighted not to be working with fractions but with even metric numbers."

Like others who have converted, he says the problems are all caused by resistance in the rest of the industry, particularly in lumber suppliers.

"We still have to buy our lumber in per thousand board feet, so we're still converting there. It doesn't cause major problems, but we do have to be careful doing material takeoffs from plans."

Metric capability at Stelco

Stelco's sales engineering manager Jim Cran says incoming metric orders to Stelco have been slowly but steadily increasing. At the moment, Stelco has two products, reinforcing bars and tin mill products, for which about 90% of domestic orders are expressed in metric units. Another example is steel plate products for which about 19% of incoming orders are now in metric units. From the overall point of view, incoming orders represent slightly less than 10% of the total volume of incoming orders.

It was first estimated some ten years ago that metric conversion at Stelco would cost in the order of \$95 million. This was subsequently revised to less than half the original estimate and finally the total cost of conversion came to \$5 million, or a one-time cost of less than 1% of one year's sales.

Users of steel

The largest users of steel are the automotive industry, construction industries, highway vehicles and agricultural equipment manufacturers.

And, on their literature they are also still having to work with imperial, putting imperial equivalents for contractors with old plans, he says.

Lortie thinks the time is right for a stronger push from government, HUDAC, and architects for hard metric conversion. He says right now in Ottawa, plywood and roof trusses are still 80 per cent imperial. "We've got five salesmen covering the Ottawa area and they are finding the big builders are still imperial; their plans aren't converted, and every time they have to build a metric project it's an imposition.

And he's angry that some builders are getting away with soft conversions for Canada Mortgage and Housing projects. "To me as long as that is tolerated, you might as well forget about metric."

In Australia, he says, there were 400 standard hinges before metric conversion, now there are 36. The gypsum or drywall industry here has reduced standard sizes from seven imperial to three metric. Standard stud sizes have gone from 11 to 4.

Ellis explains the sizes of products had to be changed because the metric system is dimensionally co-ordinated, which means everything in the building is designed to fit together. Sizes of blocks, panels, light fixtures and so on are all based on increments of the 100 mm building module. Standard openings will accommodate standard products. This will save time that's now spent cutting and fitting and eliminate material wastage, says Ellis.

- The longer the transition period to metric measurements, the more the switch is going to cost.

The longer the conversion to metric takes, the more it will add to everybody's costs, in terms of dual dimensioning, pricing and costing.

For those who have made the metric switch, it's getting harder to stand by and see the metric advantages cancelled out by industry ostriches who seem to want to be forced to change.

As Lortie says: "Metric is an advantage for us in manufacturing, but a disadvantage for marketing. It's time to encourage those who have hard converted."

Steel industry reports progress

The Canadian Institute of Steel Construction reports in the Stelco 80-07 Metric Newsletter that 50% of the structural steel projects now being tendered are in metric units. The Canadian Sheet Steel Building Institute's members report that 30-40% of their sheet steel product business is now metric. Member firms are still soft-converting before placing orders with Canadian steel manufacturers. Both institutes state that the availability of hard metric price lists for steel products is a prerequisite before they can change their internal operations to metric.



Louis F. Polk



Adrian G. Weaver

Meet the U.S. Metric Board

This is the first in a series of profiles on members of the U.S. Metric Board, the official U.S. governmental body whose mandate most closely parallels that of

Metric Commission Canada. The first deals with Dr. Louis F. Polk, the Board's chairman, and Adrian Weaver, the vice-chairman.

Dr. Louis F. Polk was appointed by the President as chairman of the U.S. Metric Board. An authority on international metrology, he has represented the U.S. at various international standards meetings and served on boards and committees of national and technical scientific bodies for over three decades. An industrialist who earned a Doctor of Sciences degree from Miami University (Ohio) and holds several honorary degrees, Dr. Polk was chairman of the National Metric Advisory Council of the U.S. Department of Commerce from 1969 to 1971. He is vice-president and a director of the American National Standards Institute, and served as chairman of ANSI's Metric Advisory Committee. He has also served on the American National Metric Council's executive committee.

Dr. Polk is a retired vice-president of the Bendix Corporation, having served on its Board of Directors for nineteen years, and is a past chairman and president of The Sheffield Corporation, now a part of the Bendix Corporation. He is a former director of boards in the banking, industrial, and civic fields, and continues to serve on several.

Adrian G. Weaver, who was the first vice chairman, represents business and industry on the U.S. Metric Board. He is director of product safety for the IBM Corporation, and was the founding chairman of the American National Metric Council. He joined IBM in 1951 as a design engineer in Endicott, New York, and subsequently held various management positions in development and product engineering. In 1966, Mr. Weaver became manager of engineering standards. He was named director of standards applications in 1967 and director of standards practices in 1969. He assumed his present position in 1976.

Mr. Weaver has been a member of the Metric Advisory Committee and the Metric Council Planning Committee of the American National Standards Institute. He holds a B.A. in physics from Colgate University and an M.S. in industrial management from Massachusetts Institute of Technology. He was named an Alfred P. Sloan Fellow at MIT in 1956.

Stelco forges ahead (From page 6)

age capacity is 1 060 000 t of coal and 860 000 t of ore.

The various types of coal will be conveyed to blending silos, prior to being converted to coke. That conversion will take place in a battery of 45 coke ovens - at 6.7 m in height, they are the tallest in the steel industry in North America.

The coke-making plant is not yet in operation, and won't be until 1981. In the meantime, coke for the Nanticoke plant is being supplied from stockpiles at Hilton Works in Hamilton.

The new cokemaking plant will employ the latest in charging cars and will use sequential charging and other features to control emissions. A moveable hood will be used to capture and clean emissions during coke pushing and subsequent transportation to the quench station.

Adjacent to the coke ovens will be a facility for the processing of coke oven by-products.

The iron ore pellets are moved from the storage area by rubber-tired vehicles, with a bottom-dump vehicle discharging a load into a hopper underground, where conveyors will take the material on its trip to the blast furnace.

The coke, iron ore pellets and limestone are fed by conveyor into the top of the 91 m high blast furnace. The feed is controlled by computers in the control room.

Stelco has incorporated the latest technology from around the world into the blast furnace operation. It has an initial design capacity of about 2700 t/d of hot metal,

with an ultimate capacity of more than 4700 t/d.

In the huge steel shell of the blast furnace, the ingredients are heated to more than 1400°C, producing molten iron and slag. The molten iron is transported to the steelmaking furnaces in enclosed, brick-lined railway ladle cars.

The Basic Oxygen Furnace and Slab Caster complex at Lake Erie Works is 82 m in height and covers an area of 23 000 m² of land.

The two steelmaking vessels in the BOSC have a capacity to produce 230 t of raw steel in each heat.

This building complex also houses one of the most modern slab casting facilities in the world. A twin-strand, continuous slab caster produced slabs of 9.7 m in length, and up to 1 800 mm in width. The current maximum slab thickness is 240 mm, with a future thickness of up to 300 mm.

The slab is produced by discharging molten steel from a ladle into a huge tundish, from which it flows down vertically into an oscillating, water-cooled copper mold. As it moves through the caster, the steel gradually begins to solidify. By the time it emerges on rolls at the bottom, it is solid enough to be cut to length by a travelling torch.

These slabs are subsequently conditioned and then loaded aboard rail cars for transportation to Hilton Works, in Hamilton. In the near future, a Hot Strip Mill is scheduled for completion at Lake Erie Works and will convert slabs to wide strip steel.

One-day metric courses popular in New Brunswick

Helping New Brunswickers become familiar with metric conversion has been Aldéo Daigle's full time job for over two years.

Daigle spends half his time out of his Fredericton office giving courses on metric around the province. Some 110 such one-day courses for government, industry and business personnel were conducted by the New Brunswick metric information centre last year. Coordinator of metric conversion for the province is W. Doug Neilson of the Department of Municipal Affairs.

"The general reaction of people in New Brunswick to metric conversion is very positive" says Daigle, adding that people who take the one-day seminars often remark that they never thought

learning metric would be so easy. Nearly two thousand enrolled last year.

Besides the course, the metric conversion information centre answers questions on metric matters and distributes large quantities of Metric Commission Canada literature and posters. Last year there were 1 700 telephone inquiries, 800 letters and 1 300 visitors to the conveniently located downtown office. Fifty per cent of the inquiries were from various levels of provincial and municipal governments, 30% from industry and business sectors, with the remaining 20% from the public at large.

Public relations activities, besides the occasional radio open line, included talks to service clubs,

women's institutes and other organizations (33). Six metric displays featuring products and information for specialized groups were supplied by the centre. Assisting Neilson and Daigle is the third person on staff, receptionist-secretary Ms. Stella Kerr.

Metric conversion information centres operate in seven provinces and two territories under a cost sharing agreement between federal and provincial governments. Services are provided to a wide variety of publics, provincial and municipal agencies, businesses, trade associations and consumer associations.

The New Brunswick metric information centre is located at 335 Queen St., Fredericton, N.B. E3B 5H1, Tel. (506) 453-3690.



New Brunswick information officer Aldéo Daigle and assistant Sheila Kerr.

Businessmen:
If you have a story to tell regarding your metric conversion program, write to The Monitor, 240 Sparks, Ottawa, Ontario K1A 0H5.

Computer processing aids in monitoring conversion

Computerized network planning and progress reporting using the Project/2 software package is now a feature in the *Reporter* and other progress reports published periodically by Metric Commission Canada.

The flexibility of accessing the computer data file was considerably increased through the introduction of an upgraded terminal at the Commission and the introduction of a portable terminal; the latter allows for demonstrations and operation at sector committee meetings.

Project/2 is a computer program for network-based project planning, scheduling and monitoring (e.g. sector plans). Through English language commands, the planning manager can create the

sector plan network and easily update it whenever conditions change. The user does not require a knowledge of programming or computers. He can produce this report either on a TV-like screen or on a paper print-out.

Over 40 different types of printed and graphic reports can be produced to provide the specific information needed. This comprehensive planning and scheduling tool offers automatic network plotting, critical path scheduling, progress reports, bar charts and multiproject features. It can process activity-on-node (Precedence) networks using nothing more than the sector plan activity list as input.

This modern reporting system enables the Commission to assist

sector and steering committee members to phase and coordinate their plans so as to achieve the benefits of metric conversion at minimal cost. The successful achievement of such an objective relies on a vast amount of information flowing to and from Metric Commission Canada. This computerized data processing system helps the Commission keep all interested parties abreast of implementation progress in relation to sector plans.

The PSDL (Project Software Development Inc.) Project/2 Computer Software is now operational through the Datacrown computer service company. Project/2 is currently being used by over 150 organizations around the world.



Visitors to Metric Commission Canada's new "Metric on the Farm" exhibit when it came to the New Brunswick Agriculture Centre recently were (l to r): R.L. Bishop, Deputy Minister, Department of Municipal Affairs and chairman of the N.B. metric conversion steering committee, Dr. Camille Bernard, Director of the Fredericton research station of Agriculture Canada and H. Raymond Scovil, Deputy Minister of the Department of Agriculture and Rural Development.



Project/2 coordinator Joanne Mitchell at the MCC terminal.

Prices and conversion

The impact of metric conversion on price increases on a national basis seems minimal and price movement up or down coincidental with metric conversion of commodities does not indicate the price changes are caused by metric conversion. The increase of prices over time is a function of many factors, the basic components being: cost of production, consumer demands, monetary exchange rates and international balance of payments. The current inflationary trend became significant about five years ago and preceded metric conversion.

Canadian industry proceeds into metric conversion on a planned basis. Often non-metric containers are phased out before metric containers are put onto the market, thus avoiding the discarding of still usable imperial-sized containers. Soft drink bottles and milk jugs are prime examples of this procedure. Some costs would be involved in the re-design of new, metric-sized packages, and package re-design

is something which occurs for every product anyway every few years as part of normal on-going marketing. It is noted, however, that the brewing industry agreed to soft-convert to 341 mL so no container change costs were involved. No reference to fluid ounces are now found on the labels.

There are some exceptions to the general and gradual upward movement of prices. Sugar prices in Canada moved downward over the period of conversion to metric because of falling international sugar prices. Prices of fluid whole milk have moved up annually, reflecting, among other things, increased prices awarded farmers by provincial dairy boards. Prices of other products, such as ice cream and soft drinks have been influenced by specials and price wars. Basic laws of supply and demand operating in a free marketplace provide the controls on retailers to offer competitive prices.

Drivers victims of ill-explained facts

by Max Wickens

The task of trying to give Canadians an annual fuel-consumption forecast on each new year's crop of cars is about as tough as trying to measure or predict how blue the sky will be each day.

As a result, federal ratings released recently suggesting 1981's new cars will have an average thirst of just 9.4 L/100 km — can't be regarded as a promise on a stack of bibles.

As things stand, for example, some drivers who check their cars performance in the year ahead will almost certainly continue to express bewilderment, frustration and even downright anger at failing to come close to duplicating the appropriate ratings for their cars.

Moreover, they'll discover the situation is likely to persist, even after careful tuneups and scrupulous efforts to eliminate lead-foot driving habits.

In encountering this clash between official figures and real-life facts, motorists appear to be the victims of a baffling grab bag of ill-explained and poorly understood factors.

Among them:

- That government-authorized ratings can't and don't necessarily relate to real-life driving. The result of highly-artificial laboratory tests, the ratings usually do little more than furnish a yardstick for rough comparison of one car against another.

- Differences between Canadian and U.S. exhaust emissions law have created problems. The standards have grown apart over the last five years and are likely to diverge even further before 1985. As a result, U.S. or Environmental Protection Agency ratings heavily publicized in cross-border print and broadcast media are of no value to Canadian consumers. This is because different smog-controls and even entirely different engines are used in many if not most cars sold in Canada nowadays. (It's estimated, for example, that 95 per cent of all 1981 General Motors cars to be sold in Canada will not have the innovative electronic engine controls being heavily advertised in the U.S. Similarly with other makes.)

- Confusion also results from advertisers emphasizing one instead of all three fuel-mileage ratings computed for each car. The full range measured covers highway, city and then harmonically averaged performance, or the so-called Rating Code. The temptation is for an advertiser to spotlight only a car's best-sounding figure, usually that for highway consumption, qualifying it with asterisks and fine-print.

- Resistance to metric conversion and confusion over its terminology have also clouded the situation. This shows up in muddled car industry advertising which attempts varying combinations of

imperial and metric measures. An interesting irony of this situation is that most industry emissions and fuel economy research, worldwide, is measured in metric. Conversion to miles and U.S. gallons are usually conducted only at the end of the process, and chiefly for U.S. retail advertising purposes.

- Mathematical and format errors are also not uncommon and these may be traced to attempts to translate U.S. originated data back into metric formats. Effective last January, Canada's only official measure of automotive fuel consumption was quoted in litres of fuel consumed for each 100 km driven, written L/100 km.

- Further confusion results each fall when not all importers are able to offer fuel ratings for their cars at the same time as U.S. manufacturers do. The reason for this is that the balance of the automotive world does not adhere to Detroit's conception of a formalized "model-year." Cars are instead simply offered for sale when and as manufacturers are ready to produce them — hence introduction of many new import models to the Canadian market at random during the year.

- It also bears noting that any car's actual fuel consumption varies not only according to driving habits and type of driving, but also according to a car's state of tune, and even according to weather and road conditions.

A key point, not usually understood, is that vehicle manufacturers do each year's actual testing and turn their results over to Transport Canada, subject to audit.

Although to conduct such tests in a laboratory does not seem meaningful, it does in fact use the only currently-known method by which several hundred makes and types of car can be tested quickly and under absolutely uniform conditions.

Variables excluded in this way include head winds, tail winds, temperature variations and the habits of individual test-drivers.

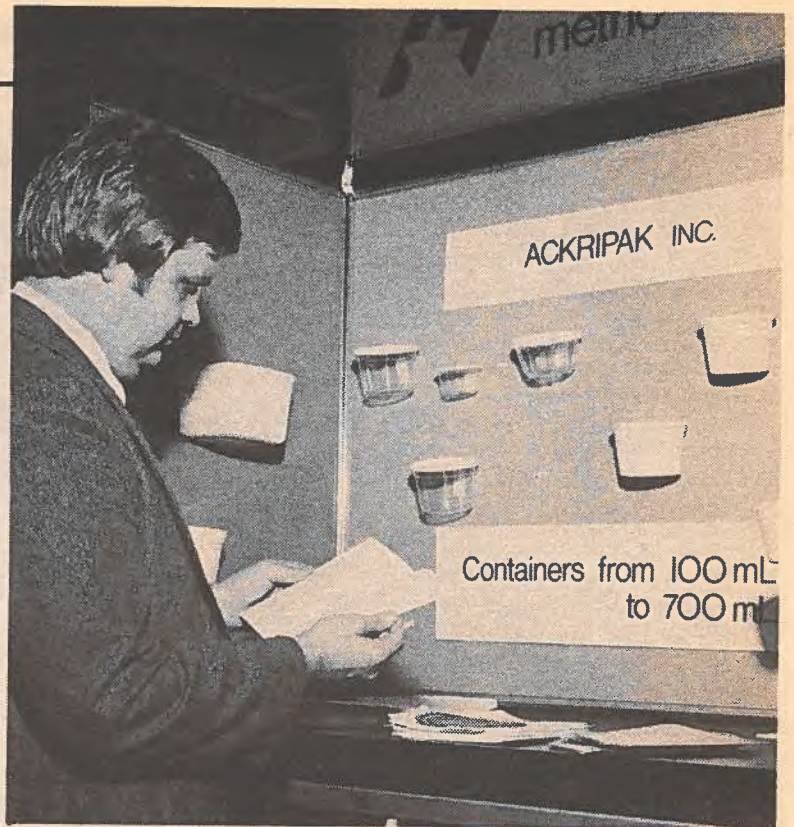
The ratings themselves are obtained by having prototypes of each year's new cars robot-driven at room or "summer" temperatures on a rolling test-bed. Exhaust emissions are collected throughout this process and they are lab-checked to reveal the amount of fuel burned as disclosed by the weight of pollutants collected.

A Transport Canada source says he expects confusion may be reduced during the next two years as auto manufacturers are persuaded to phase out their use of imperial and U.S. gallons in advertising.

— The Canadian Press

An automotive writer since 1960 and for six years an auto industry executive, Max Wickens now is an editor with the Hamilton Spectator.

A Metric Commission Canada exhibit highlighting metric plastic products received a record number of visitors at the Plastics Show in Toronto last October. Many of the 200 other exhibitors including both manufacturers and retailers, visited the MCC booth and showed interest in the new metric-sized containers.



Kitchen measures handed out at the MCC booth proved popular and general response was favourable. A visitor is seen here familiarizing himself with metric units.



The MCC booth exhibited various plastic metric containers now on the market, including soft drink bottles, kitchenware, milk jug containers, disposable cups, fertilizer bags and others. Here we see exhibit hostess Denise Brown, explaining how to write SI to a visitor.



Photos Bob Cunningham

Also featured at the MCC booth was a scale for random weight food products and body measurement equipment. Above, site officer Lise George shows a visitor his height in centimetres.

Note that volume = edge cubed = 10 cm x 10 cm x 10 cm = 1000 cm³
1000 cm³ = 1 L (litre)
A cubic centimetre (cm³) cube holds 1 mL of water
Milk, gasoline, etc. will be sold in litres and liquids below 1 L will be measured in millilitres (mL)

1000mL = 1 L (litre)



Speed

km/h (kilometres per hour)

A 50 km/h speed limit applies in most cities. Actual speed limits are established in accordance with local regulations.

100 km/h This speed limit is the most common on freeways. On most rural two-lane roadways, 80 km/h is typical.

10 000 visit MCC booth at Plastics '80 in Toronto