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NATIONAL RESEARCH COUNCIL OF CANADA DIVISION OF BUILDING RESEARCH

No.

420

TECHNICAL NOTE

RESTRICTED CIRCULATION

PREPARED BY R. F. Legget

CHECKED BY

APPROVED BY

DATE June 1964

PREPARED FOR Members of CNC/ISO and Others Interested

SUBJECT

CANADA AND INTERNATIONAL STANDARDS

Notes from the 14th National Standards Conference of ASA

American interest in Canadian participation in the work of ISO resulted in the writer being asked (probably because he is the Chairman of CNC/ISO) to attend the 14th National Standards Conference of the American Standards Association in Washington, D. C. The writer participated in a panel discussion on Tuesday 18 February, the Chairman of which was Mr. F. L. LaQue, Vice-President of the International Nickel Company. Mr. LaQue is also Chairman of a special top-level study committee that is investigating generally the present position and the future of standards in the American economy.

Subject of the panel discussion was "National Long-Range Problems in Standardization" and the speakers were:-

- T. A. Marshall Jr., Executive Secretary of ASTM (on "Responsibilities and Operations of Standardization Societies")
- R. F. Legget
- Dr. Wallace R. Brode, former Assoc. Director, National Bureau of Standards (on "Cooperative Procedures between Government and Private Standards Organizations")
- Roy P. Trowbridge, Director of Eng. Standards, General Motors Corp. (on 'Standards Requirements of U.S. Industries').

There is a mimeographed copy of each talk with DBR/NRC; brief comments will be made later. The writer later used his own talk

as the basis of a similar talk to the Electric Club of Toronto; a copy of this accompanies this Note. The talk in Washington was well received and many questions were asked, especially about the operation and financing of CNC/ISO since the United States does not yet have any corresponding group.

This Note has been prepared, however, to record some of the other impressions and information gained at later sessions of the ASA meeting and in private discussions with some of those attending.

MEETING WITH MR. H. St. LEGER

1 .

It was a special pleasure for the writer to meet, for the first time, Mr. Henry St. Leger, the Secretary General of ISO, who was a special guest at the Conference. Because of the crowded schedule and the natural demands upon the time of Mr. St. Leger, we had little time together but in three very brief talks I was able to indicate to the Secretary General the steady growth of Canadian interest in ISO and our keen desire to increase our participation.

My comments were relevant to the following two paragraphs, typed on a plain piece of paper that was handed to me rather formally by Mr. St. Leger:-

The Canadian Standards Association is a "P" Member or an "O" Member of a number of Technical Committees, but one is forced to admit that in effect it makes only a very modest contribution to the work of these Technical Committees. Canadian delegates attend meetings all too rarely.

The General Secretariat considers that Canada's very limited contribution to the work of ISO falls far short of its actual potential and hopes that an all-out effort will be made to ensure that the CSA takes up its rightful place in the ISO Technical Committees.

In thanking Mr. St. Leger for this communication, I merely said that we quite agreed.

[When first meeting the Secretary General, I naturally addressed him in French, his name having always suggested to me that he was a French or Swiss national. Mr. St. Leger replied in English, since he is an American citizen - albeit bilingual - who was born in Brooklyn.]

DISCUSSION WITH DR. A.T. MACPHERSON

Among those with whom I spoke between meetings was an old friend, Dr. A.T. Macpherson, Associate Director of the National Bureau of Standards, having special responsibility for international relations. Some of our talk was private but, in suggesting the importance that now attaches to international standards, Dr. Macpherson asked what Canada was doing about translating any of its national standards (either CSA or CGSB) into other languages. I had to explain that to date only CGSB had made even a very small start at translating its documents into our own second language.

I was then told of a request that had come from the American Embassy in an important South American country for copies of some American standards. The State Department had sent the request to NBS: they had to purchase copies from ASA (since there is no free distribution): these were then sent back to the State Department and so, eventually, to the Embassy that had requested them, this quite natural process taking two or three months.

The same request was sent on the same day to the German Embassy in the same South American city. A complete set of the German (DIN) documents requested was delivered to the agency that had requested them, the very next morning, completely translated into Spanish.

I was also told that one of the U.S. steel companies had been studying the national steel specification prepared in another South American country and had found that it contained clauses from the national standards of 8 different countries, including Japan. Apparently in some countries Japan is providing the same service as the Germans in having translations of Japanese standards available at many of its embassies.

[And I found that the Canadian Embassy in Washington had recently had to dispose of its own set of CSA documents in the interests of needed space. They were moved to the National Bureau of Standards.]

We discussed the coming need for having all such standards microfilmed on cards so that they could be easily handled and stored, the coming "explosion" of standards making such a procedure worthy of study and planning even now.

SYMPOSIUM ON WORLD VIEWPOINTS ON STANDARDIZATION

This private discussion, and similar briefer talks with others, gave added interest to the afternoon session at which international standards were reviewed by a panel of distinguished speakers from overseas. Mr. St. Leger described the work of ISO very clearly and modestly. The story is known to members of CNC/ISO but it was of interest to hear that all the work at ISO H/C is done with a staff of 24.

Dr. Lal C. Verman, Director of the Indian Standards Institution, gave a most interesting account of his work, possibly the most significant point being that they have now fully adopted 65% of current ISO Recommendations. They are well on the way to producing 10 million tons of steel a year. This fact added interest to Dr. Verman's review of their progress in converting to the Metric System. The Act authorizing this was passed in 1956 giving a ten-year period for the conversion. They will not be ready in 10 years for complete metric practice but it will not take them very many years more. One impediment has been the slow progress in educational institutions.

Mrs. Ciabura, a mechanical engineer and Director of the Argentine Standards Institution (IRAM) was the next speaker. She spoke with great conviction and an enthusiasm that was almost infectious, but as she was speaking English with a pronounced Spanish accent in a room with imperfect acoustical properties, I was unable to understand her and so will have to read her speech when it is published later in the year.

The last speaker more than made up for this disappointment. He was Mr. Ole Sturen, Director of the Swedish Standards Institute. It was of relevant Canadian interest to hear that 55% of their income comes from Swedish industry, 25% from the sale of publications and 20% in the form of a direct grant from the Swedish government, as a consequence of which the government appoints two members of the governing board. The fact that Sweden's exports equal 20% of the Gross National Product (c.f. Canada - 16%) shows clearly why Sweden is so interested in international standards.

Mr. Sturen started his talk by apologizing for not having a finished text but explained this by saying that he had just come from meetings in Geneva in connection with the European Free Trade Area and the grouping of the non-common market countries. The United Kingdom had put "Standards" on the Agenda of an important meeting of E. F. T. A. held earlier in February. These European countries are

actively working together in the interests of trade development and in their discussions the Council of Ministers of E. F. T. A., has given high priority to standardization. This is illustrated by the fact that there is more than a probability of the E. F. T. A. group combining with the Common Market countries in the interests of pooling their standards work. And in the meantime, all European Standards bodies have combined their efforts in the European Standards Coordinating Committee.

Very politely, but very definitely, Mr. Sturen explained that one reason for this European activity in the standards field is the very limited and restricted efforts of the United States in the field of international standardization. The speaker quoted a very pointed comment on this from a document used at Geneva which he had helped to draft. Although he did not mention Canada, all that he said applied to this country.

Business International Incorporated represents 14 major U.S. industries in Europe and had recently had meetings with officials of E.F.T.A. Mr. Sturen, again very politely, made it quite clear that unless the USA was willing to talk in terms of using international standards, their chances of increasing trade with Europe were not good. He illustrated what is happening in international trade with the following figures on total (world) steel production.

In 1950, USA produced 50% of the total In 1955, USA produced 40% of the total In 1960, USA produced 25% of the total

There are, therefore, three big groups now producing the major steel supplies for the world, and not just two (USA and USSR), thus providing yet another urgent reason for the development of international standardization.

Finally Mr. Sturen explained, almost casually, that the German government is paying for the training of a small number of German engineers each year, for a two-year period, by DIN, the German Standards organization, so that they may then be sent abroad with the idea of assisting in the promotion of German overseas trade.

AMERICAN SPEAKERS

Brief reference may now be made to the remarks of the speakers in the symposium in which the writer participated. Mr. Marshall gave an admirable outline of the way in which ASTM operates. Dr. Brode presented a splendid paper on necessary cooperation between government and industry, presenting views that were almost novel in the United States although long accepted in Canada. He pointed out that there is no hard and fast line between the test method, the specification and the standard, the one blending into the other. Mr. Trowbridge presented what may perhaps be called the traditional point of view of American business, typified by this actual quotation from his text - "The foundation of a national standardization program is necessarily the company standard."

Discussion brought out the fact that there are at least 2,300 bodies in the USA now producing what are called standards. (This was from Mr. LaCue who added that one of the bodies is the National Association of Morticians - only they do not deal with a product, but rather with a service.) The standards field is naturally dominated by ASTM with its more than 3,300 standards, followed by SAE, with all other bodies quite low in production by comparison. Of ASTM standards, 800 are now American standards.

There was a lot of discussion about the Metric System, all sparked by my passing reference to the ASTM Statement of Policy and the fact that eventual use of metric units was inevitable. This apparently annoyed Mr. Trowbridge, from whom we heard the usual view of "big business" as to the impossibility of the United States adopting metric units. In reply, a speaker for the floor, who was an engineer with the Square D Company, very quietly pointed out that today 80 per cent of the population of the world lives in countries that do use the metric system. Reference was made by several speakers to a report from the Stanford Research Institute in which the cost of converting American industry has been estimated. And Dr. Brode asked how many realized that the American budget for moon exploration would far more than cover the complete cost of converting everything in the United States to metric units.

CONCLUDING NOTE

Members of CNC/ISO will see how stimulating the meeting proved to be, and how relevant much of the discussion was to what the Committee is trying to do. Limited though the Canadian effort in ISO

work may yet be, we do have the advantage of a representative national committee to deal with ISO business, even though it does not yet have any official connection with the Canadian government, existing links being informal through the official positions occupied by some of the members.

Two questions suggest themselves and are submitted for the consideration of the Committee.

- (1) Now that CNC/ISO has got appropriate Canadian committees established or working in relation to almost all ISO Technical Committees in which Canada has direct interest, what further efforts can the Committee make towards publicizing the vital importance of international standards to the Canadian economy (possibly using some of the facts herein recorded)?
- (2) Taking a rather longer term view, what should be the future composition and arrangement of CNC/ISO in order that it shall be able to serve Canada adequately in this rapidly expanding and important field?

NATIONAL RESEARCH COUNCIL CANADA DIVISION OF BUILDING RESEARCH

CANADA AND INTERNATIONAL STANDARDS

(A talk to be given to the Electric Club of Toronto, Royal York Hotel, Wednesday 26 February 1964)

by

Robert F. Legget
(Director DBR/NRC)
Chairman, Canadian National Committee on ISO.

Ottawa 22 February 1964

CANADA AND INTERNATIONAL STANDARDS

Canada is now the fifth largest trading nation of the world. It is sometimes difficult for Canadians, especially those of the older generations, to realize the commanding position now occupied by our country in international trade. Residents of Toronto are regularly reminded of this fact, at least during summer months, by the ships of many nations that now sail into Toronto Bay, carrying goods from the four corners of the globe. It is surely a truism to say that Canada must do everything possible to maintain this pre-eminent position in world trade. The promotional work done by the Federal Government through its Department of Trade and Commerce, with its devoted foreign staff in almost all the major cities of the world, now supported by the efforts of Provincial governments notably that of Ontario, are well known and highly regarded by all who have personal knowledge of this fine service. There are, however, other things that must be done to facilitate trade between the nations of the world. One of these is typified by the pallets upon which you may see foreign goods being unloaded in your harbour. These are usually readily handled by the modern cargo handling equipment with which the port of Toronto and the ships that use it are equipped. Has it ever occurred to you that agreement on the size of such mundane units as the pallets used for cargo shipment is a vital part of the development of world-wide commerce?

Admittedly this is a very simple example of the desirability of international standardization, even though it can be a singularly important

one if pallets do not fit! But it may well serve to introduce the subject of international standardization, about which you have invited me to speak at this luncheon. I am well aware that there are some who consider that the very idea of standardization is somehow incompatible with that freedom of enterprise which is so fortunate a feature of our economy. We are, however, a member - and an important member - of a world-wide community of nations that is of necessity ever drawing closer together, as the wonders of modern communication shrink the world. Whether we like it or not, therefore, we can not afford - even in our own interest - to leave to the older countries of Europe the development of organizations that are called international and which are charged with the development of technical cooperation on a truly world-wide scale. We must participate, if only for our own self interest. Far beyond this, however, with our relatively affluent society, our great technical resources and our most favoured position in the world, we have a significant contribution to make for the benefit of younger and smaller nations that can only have good effect. This we are just discovering, not exactly in the hard way, but certainly only just in time.

The members of this Club will be, I am sure, quite familiar with the well-known and long-standing work of the International Electrotechnical Commission (IEC) in its own specialized field. It is rather with Canadian participation in the International Organization for Standardization (ISO) that I wish to talk since its work may not be so well known to you. It is, in fact, little known anywhere in Canada apart from within those industries that have had occasion to see how ISO "Recommendations" are coming into world-wide use. It is in the general field of standardization now so well served by ISO that we are going to see such great advance in the years immediately ahead of us, as ISO catches up on the head start that early pioneers of international standardization gave to IEC.

Before the war there was an international standards body serving the general field known as the International Federation of National Standardizing Associations (ISA). It was established in 1926 but had a rather chequered career, numbering only 20 countries in its membership. This is not really surprising when one considers how limited was activity in national standardization work in pre-war years. After 1939, the work of ISA naturally slowed down; it came to an end in 1942. But the war had shown, as never before, the vital need for international standardization and so in 1944, ISA was succeeded by a United Nations Standards Co-ordinating Committee (UNSCC) which brought together the standards organizations of 18 allied countries, initially for wartime purposes. On 14 October 1946 representatives of the members of UNSCC met in London, with representatives of other countries, and as a result the Committee was transformed into ISO, the first provisional General Assembly of which was held, also in London, on 24 October 1946.

ISO was then established as a non-governmental organization holding Consultative Status, Category B, with the United Nations and actually came into official being when the fifteenth nation officially agreed to join, on 23rd February 1947. Its headquarters were established in Geneva and are there today, close to those of IEC. Its growth during its first decade was slow and steady but not spectacular. By 1955, for example, only 18 ISO "Recommendations" had been approved. Today, there are almost 400.

Fifty countries are now members, representing the whole of the developed part of the world. More of the younger countries may be expected to join as soon as they reach the stage in their development at which industrial standardization becomes of significance.

I am as happy to say that Canada was one of the earliest countries to join ISO as I am almost ashamed to add that until the year 1955 we did practically nothing about it, apart from paying regularly our annual fees. As the Canadian economy readjusted itself from its phenomenal wartime expansion to that of one of the leading trading nations of the world, domestic problems were quite naturally dominant in business thinking. It was not easy for us to adjust our pre-war ideas of Canada - as the granary of the world, so to speak - and to realize that our exports now covered the whole range of commerce, making us at one time the fourth trading national of the world. We are still the fifth.

The year 1955 happens to be not only a convenient reference date in relation to the growth of ISO but it proved to be also a turning point in Canadian participation in its work. For in the fall of that year, the Aluminum

Company of Canada discovered, almost by accident, that a draft ISO Recommendation for unalloyed aluminum ingots (now R 115-1959) was to be considered at a meeting of Technical Committee No. 79 (TC 79), scheduled to be held in Paris, little more than a week later. This particular draft-contained some detailed provisions for major and trace elements that, by failing to recognize some important characteristics, would have effectively obscured the high quality available in Canadian aluminum and reduced its competitive position in any country that adopted R 115 as its own standard - and aluminum is Canada's sixth most important export! With an alacrity that even today commands our respect, ALCAN had two senior technical representatives at that meeting, in France, within the week, as fully accredited Canadian representatives. The Canadian viewpoint was presented; the draft was amended; the resulting Recommendation is now in use throughout the world, with no detriment to Canadian aluminum.

As can be imagined, this incident acted as a catalyst to Canadian interest in international standardization. The situation did not change overnight but from the fall of 1955 there has been slow but steady improvement. There have been similar incidents, although none quite so dramatic as that meeting in Paris. Steady work has developed in other fields without the imperative of such obvious conflict with Canadian interest. Quite the best example I can give you is the Canadian Advisory Committee on ISO/TC 38, this being the designation of the international textile group. The Canadian Committee was established as early as 1953 by the Canadian textile industry in association with the CGSB Committee on Textiles, which provides the

secretariat for the Committee. It examines all ISO documents in the textile field, taking such action as it deems to be necessary, and ensuring (in so far as possible) that Canada is always represented at meetings of ISO/TC 38 and of its working groups, usually by one member from industry and one from government.

There was, therefore, a modicum of Canadian activity in ISO when a special joint study committee was appointed in 1956 to consider how best Canada could play the part that it should in this important international activity. This study group was established jointly by the Canadian Standards Association and the Canadian Government Specifications Board, both these organizations (which work in parallel) having technical committees with lively interest in corresponding ISO Technical Committees. The unanimous recommendation of this group was that there should be a continuing and representative Canadian National Committee on ISO and this body was duly established in 1958. It consists of twelve members and a chairman drawn almost equally from industry and government and reports to the Board of Directors of CSA. It meets twice a year and considers all ISO policy matters affecting Canada, correlating and coordinating the work of Canadian technical committees that correspond with the ISO /TC's. It has almost completed a careful review of Canadian interest in all the Technical Committees of ISO which now number over 110. As a result of this work Canada now holds participating ("P") status in about half of all ISO/TC's, and observer ("O")

status in about one-quarter of the total.

A difficult policy question relates (as is so often the case) to finance- Who should pay for the attendance of Canadian delegates at ISO meetings? The policy adopted is that industry is expected to pay for the expenses of its representatives while government pays for its men, the annual dues to ISO being paid in full by the Federal Government through CSA. The expectation is that, following earlier experience, there will, whenever possible, be one delegate from industry and one from government at all ISO meetings at which Canada should be represented. Despite some questioning, the policy is working well, being in entire accord with that happy liaison between industry and government that is so fortunate a feature of the Canadian economic scene. Gradually, Canadian participation in ISO meetings is increasing. During 1963, for example, 15 meetings were attended, in cities as far apart as Tokyo (for iron ore) and Moscow (for sawn timber). This, however, is just a beginning. If Canada is to play its rightful part in ISO work, this number must increase substantially in the immediate future.

That Moscow meeting was of unusual significance. ISO/TC 55

deals with "Hewn, Sawn, and Planed Timber". Canada has been a

participating member since 1962 (again, just in time?). At the second

meeting of the Committee held in Helsinki in 1961 some draft Recommendations

were developed, to be circulated for letter ballot. These showed metric

units only, despite the fact that 58 per cent of the world's timber is at

present sawn to inch dimensions. There was therefore a real job to be done at Moscow! I am glad to be able to report that due to the excellent spirit of informed compromise that characterises all such ISO meetings, coupled with the fine leadership of the Soviet chairman, it was agreed to include both systems of measurement in the Draft Recommendations, with the tacit understanding that eventually the metric units would probably come into general use.

The United Kingdom and Canada had to take up what I may call the "inch cudgels" in this instance, loyally supported by European countries which finish their lumber to inch dimensions. Unfortunately, the United States of America holds only "O" status in this committee and so was not represented at this vital meeting and has no vote in its work. As it happened, this vote was not necessary for the satisfactory result that was achieved at Moscow but it might have been of importance. Here in Canada we see the same problem in reverse. One or two important Canadian standardization committees, when approached about participating in ISO work, have begged to be excused on the grounds that the corresponding technical committees of ASTM, serving as the American national committees for the relevant ISO/TC's, were taking care adequately of Canadian needs. With this view CNC/ISO does not agree for, despite the good will that characterizes ISO work, the day might come when Canada's vote might be vital in supporting a United States position. We are, therefore, in the process of organizing

small Canadian Advisory Committees in these fields. They will maintain
the closest liaison with the corresponding ASTM Committees but they will
hold "P" status in the ISO Committees in their own right, on Canada's behalf.
Typical examples are TC 27 on Solid Mineral Fuels and TC 61 on Plastics.

We can see a continuing need for the closest possible North

American co-operation, if only because of what I may call the "metric problem".

As you know, the use of the metric system has been perfectly legal in Canada for many decades, through a statute of the Federal Government. There is a perfectly natural reluctance to accept in Canada the inevitability of an internationally agreed system of measurement. But since 80 per cent of the population of the world now lives in countries which use the metric system, it is only being realistic for us in Canada at least to recognize the existence of the metric system. Accordingly, the recent statement on this matter issued by the Board of Directors of ASTM is one of importance; I hope that it is known to all here. The forthcoming ASTM Metric Conversion Guide should prove to be of wide use in this country as our recognition of the metric system advances.

In the international standardization field, there will naturally
be some impatience with North American "inevitable gradualness" in
relation to all aspects of metric dimensioning. But it is surely essential
that we should be there, side by side with our colleagues from the United
Kingdom and the United States, in order to see that the inch system is given

corresponding and reciprocal recognition from metric countries.

When I tell you that today, and despite its slow start, ISO has not only almost 400 Recommendations in use but 400 more in official Draft form and another 400 in preliminary draft form, you will see that I am talking of no minor or theoretical operation, but of a standardization program of rapidly increasing magnitude and importance. And it is a truly international effort. The current President of ISO is Mr. Viatkine of the U.S.S.R., an eminent leader in the standards field. The Soviet Union provides four secretariats for important ISO/TC's, the United Kingdom twenty four, the United States ten, France eighteen, but Canada none - as yet. When I mention that even such countries as Hungary, Poland and Israel each have the secretariat for one ISO committee, you will see why I feel so keenly that Canada must begin to play her rightful part in this great enterprise, and must do so soon.

We have ventured one minor suggestion to ISO, at the original suggestion of an engineer of Toronto - which is perhaps warrant for mentioning what might otherwise appear to be a matter of detail. We have asked ISO to investigate the possibility of obtaining international agreement with regard to the writing of dates. We took this action unilaterally since we could not yet expect support from the American Standards Association, and this despite the fact that the U.S. Department of Defence has officially adopted what is surely the only logical way of writing dates - the day,

the month, the year! A small thing, admittedly, and yet, as some here may know from sad wartime experience, a detail that come have awesome consequences.

I cannot imagine anyone crying "straitjacket" at an attempt to standardize on such a daily detail of commerce which could lead to such general convenience nor, much more importantly, on any of the topics that are now the concern of ISO Technical Committees. If we, in Canada, are going to play our proper part in international trade, for our own benefit in the first instance but also, surely, as a contribution to world-wide understanding, we simply cannot afford to neglect this matter of international standardization. We can give so much to its development and we have nothing at all to lose. Well may we recall those enchanted words of John Donne:

"No man is an island, entire of itself ..."

nor is any country, least of all our own.

And we may take to heart these words also, words of our own time:

"New international standards can increase (American and Canadian) exports,
can increase world trade. But they can do more. They can help significantly
in building the economies of developing countries." These words were spoken
a year ago by Secretary Luther Hodges of the U.S. Department of Commerce.

We can take them as a challenge, even as we resolve that in this vital matter

Canada will advance shoulder to shoulder with the United States in showing that in its technical progress the New World is not unmindful of the Old World, the best technical efforts of all lands being urgently necessary if we are to keep international standards in step with international needs.

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