

British Industry and the Metric System

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A report by the
BRITISH STANDARDS
INSTITUTION
following consultations
with Industry
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In May, 1962, a statement was issued by the British Standards Institution entitled "Change to the Metric System?"

The object of that statement was to present to the industries of the United Kingdom a reasoned appreciation of the considerations affecting the issue. The statement included a tentative programme for a phased change to the metric system extending over a notional period of twenty years and related the standards problem to other parallel moves which would have to be made in education, industry and trade.

The statement was given wide circulation and was submitted to the fifty principal Industry Standards Committees of B.S.I. as well as to its Divisional Councils which co-ordinate the work of the larger sectors of industry. In particular, comments were sought on the desirability of the change, its timing, its dependence or otherwise on parallel moves in the U.S.A. or in the Commonwealth, and on the suitability and availability of metric standards.

The Executive Committee of B.S.I. has reviewed the results of this enquiry and considers that they call for positive action. Accordingly, it presents this report for consideration, and for a decision as to the nature and timing of further action, by the leading organizations in industry and trade and by H.M. Government.

Views of industry

The views expressed may be summarized as follows:

(a) Though recognizing the size and complexity of the task, the great majority of industries accept that a change is inevitable. A few already work substantially on metric standards, examples being the scientific and laboratory apparatus and photographic industries. Others are positive in advocating a change and see no major difficulties in making it if it is planned over a reasonable period; leading examples in this group are the chemical industry and the electrical industry. Others—the iron and steel industry for example—are ready to do what their customers require. Others again, numerically the large majority, are prepared to face the change and the difficulties which are involved if it is accepted and planned on a national basis.

(b) The nationalized industries, which in the main have no direct interest in manufactured exports, have little urge to change but they would be prepared to follow if it were agreed to be in the national interest for the change to be made.

(c) There are, however, certain industries which could only contemplate a move if it were to be made concurrently by the corresponding industries in the United States. The most important of these are the automobile, aircraft and petroleum equipment industries, sectors where American practices have long set the pattern and where it is considered essential to maintain interchangeability with American equipment. In most industries, however, contrary to the general feeling expressed a few years ago and recorded in the joint report of the Committees of the British Association and the Association of British Chambers of Commerce, the view now taken is that United Kingdom action should not be dependent on parallel action by the United States or the Commonwealth.

(d) The Export Panel of the B.S.I. is confident that, from the point of view of exports, there would be a definite advantage in making the change. The numerical superiority of countries using the metric system, progressively being intensified, the expansion of trade with Europe—irrespective of membership of the Common Market—and the fact that the rapidly

expanding markets of the future will be predominantly metric are the factors which influence the Panel in favour of this view.

(e) There is a widely-held opinion that some drastic changes in the existing Imperial system of weights and measures (including adoption of the U.S. gallon, short ton, etc.) would be imperative if it is to remain the primary system. Decimal increments of the inch and pound would, in many instances, have to replace fractions, all of which would mean such formidable changes in the engineering industries that the direct step to adoption of the full metric system is to be preferred.

(f) A notional period of twenty years for the change as a whole—suggested in B.S.I.'s earlier statement—is generally regarded as realistic, though in some sections of industry the changeover could be carried through in a much shorter period. There are, of course, large variations in the period estimated to be required by different sections and many uncertainties because of the dependence of industries on one another internally and internationally. Almost all, however, would favour proceeding as quickly as possible once it is decided what changes are to be made and once it is clear that they have the backing of the country as a whole.

Future action

It has, of course, always been open to particular industries or firms to work to metric standards either for their entire production or to satisfy the requirements of export markets. In some cases metric and inch/lb standards, often based on an international recommendation, are substantially the same and only the presentation of the dimensions needs to differ in the two systems. But in any extensive move to the metric system by industries in this country it cannot be left to individual industries to plan a change in isolation, since each industry must be dependent on acceptance of metric standards by its customers and suppliers. There must be a co-ordinated move in major sectors—so that manufacturers of materials and components can estimate the demand for those based on metric standards and the users can be confident of obtaining what they need, in order, in turn, to modify their own designs and standards.

Naturally, for some sectors of engineering, in consequence of American influence and trade with America, dual production will have to continue for many years and indeed the final change in these cases will have to await a move by the U.S.A. Especially is this the case for the major industries referred to earlier.

To bring about a concerted change, there will have to be much inter-industry consultation not directly connected with the role to be played by B.S.I.

There must be a major move in education, both general and technical, to teach the metric system in a systematic way.

B.S.I.'s responsibilities

Action by the B.S.I. itself will be concerned with providing national standards in the metric system as they are required.

Where international recommendations exist, or are near completion, the equivalent metric British Standards can be published quite promptly, given the necessary resources. B.S.I. work in connection with further international recommendations will have to be intensified and it is vital that industry in the United Kingdom should play a full part in determining international agreements on all metric standards, even though the move in the particular sector of United Kingdom industry concerned is not imminent. The effort required in the international field must clearly increase substantially.

Where there is no international agreement to provide a basis for metric British Standards these will have to be established in the light of the most up-to-date and accepted practice in metric countries.

For use in industry and in teaching the metric system, an up-to-date publication embodying the fundamental quantities and units in the metric system as established by international agreement should be made available. Such a publication is already in preparation and is based on the relevant recommendations of the International Organization for Standardization (ISO). In addition, B.S.I. has already issued extensive publications dealing with conversion factors and tables.

Further ISO work is still needed to determine the most suitable units and sub-multiples of units for each particular sector of industry.

To plan a concerted move throughout a range of industries which contemplate an early change, it will be necessary for B.S.I.'s Industry Standards Committees to work out the programme for the preparation of metric standards for their own products, and their requirements for metric standards for materials and components. This might be linked with an enquiry by B.S.I. among other industries using these materials and components to establish whether they would find it advantageous to purchase them to metric dimensions.

As the new metric standards are introduced, the interests concerned will have to determine, through B.S.I. Committee discussion, their policy on a phased withdrawal of the British Standards in the inch/lb system, bearing in mind the need for replacement and the requirements of non-metric markets. In some sectors of industry the existence of two standards will be inevitable for a considerable period.

In consequence of this continuing use of the inch/lb system it will be desirable to eliminate obsolescent units in the system and rationalize it as far as possible—the extent to which such rationalization will be economic will depend on the rate of change to metric and on the needs of those sections of industry using the inch/lb system for a protracted period.

B.S.I. has not attempted to deal with the financial aspects of the change, which are not its primary concern. It is clear, however, that apart from the direct costs to industry and its customers inherent in any changes in production, a substantial move to the metric system must also involve B.S.I. in much additional work at national and international levels. Its resources will need to be expanded to meet the new situation.

Conclusion

In spite of a large number of indefinite and sometimes divided views which the B.S.I. statement "Change to the Metric System?" has elicited from U.K. industries, there emerges a substantial majority view that changes are inevitable and that they should be directed towards the introduction of the metric system as the primary system of weights and measures in the United Kingdom within the shortest practicable period. The timing of the change must clearly vary from industry to industry and must be left to individual industries to work out. In general, however, it is accepted that the longer a move is delayed the more costly and complicated the operation will be.

There is an almost unanimous desire for a decision one way or the other. Indecision is undoubtedly acting as a curb to industrial progress; it is also a serious obstacle to the further development of national standards which are themselves an essential part of an efficient and expanding national economy.