

# AMERICA JOINS A METRIC WORLD

"It is therefore declared that the policy of the United States shall be to coordinate and plan the increasing use of the metric system in the United States and to establish a United States Metric Board. . ."  
(Metric Conversion Act of 1975)

**O**N December 23, 1975, President Ford signed into law the Metric Conversion Act, establishing for the first time a national policy in support of metric measurement and ending a dilemma that had continued throughout the entire history of the Republic.

George Washington had raised the issue of a more uniform system of weights and measures in his first message to Congress on January 8, 1790. John Adams and Thomas Jefferson became strong advocates of that idea, speaking favorably of the recently-developed French metric system.

Instead, the young Nation followed the tradition inherited from the British, the "customary" system of measurement. In 1875, the United States committed itself to metric by signing an international agreement, the Treaty of the Meter. This treaty was followed more in the breach than the observance. Inches, not meters, continued to reign supreme at home, although one result was that, ever since 1893, our national measurement standards have been metric.

Now at last, with the signing of the new law, the dilemma has been resolved through a national policy of coordinating the increasing use of metric in this country on a voluntary basis. The impetus for such a policy has come from our business community, which has been gradually adopt-

ing metric over the last decade. Our schools have also begun to emphasize metric, and it is apparent that the country would have drifted through metrication in an uncoordinated way unless action had been taken at the national level.

The Metric Conversion Act of 1975 created a U.S. Metric Board, appointed by the President with the advice and consent of the Senate. The Board consists of 17 members representing the various economic sectors affected by the metric changeover. These include engineering, science, large and small business, organized labor, education, manufacturing, consumers, weights and measures officials, State and local governments, and the construction industry.

The Board's function is to devise and carry out a broad program of planning, coordination and public education consistent with other national policies and interests. This legislative action is, in part, the result of the comprehensive, 3-year study performed by the National Bureau of Standards for the Secretary of Commerce and submitted to the Congress in July 1971. This study recommended that the United States change to the metric system deliberately and carefully through a coordinated program. The purpose of the Metric Conversion Act of 1975 is to accomplish this

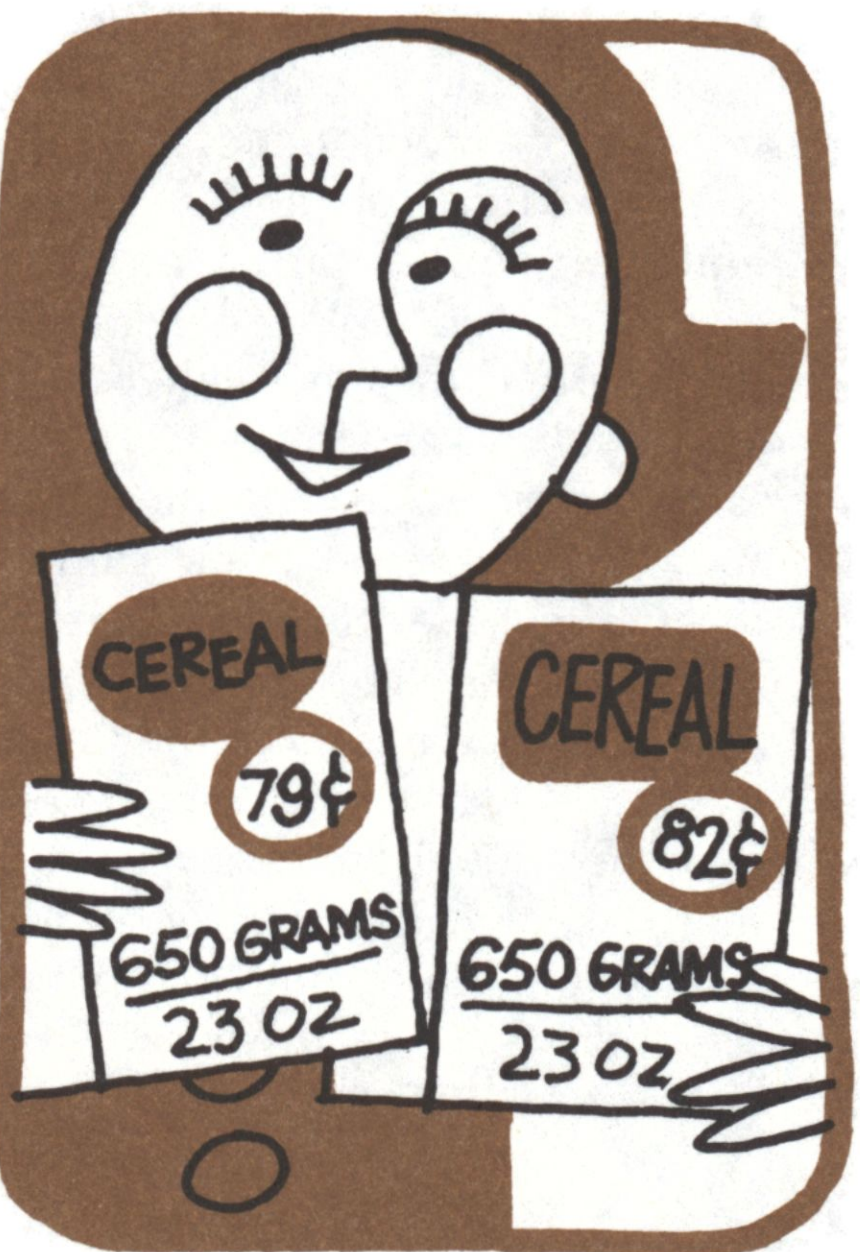
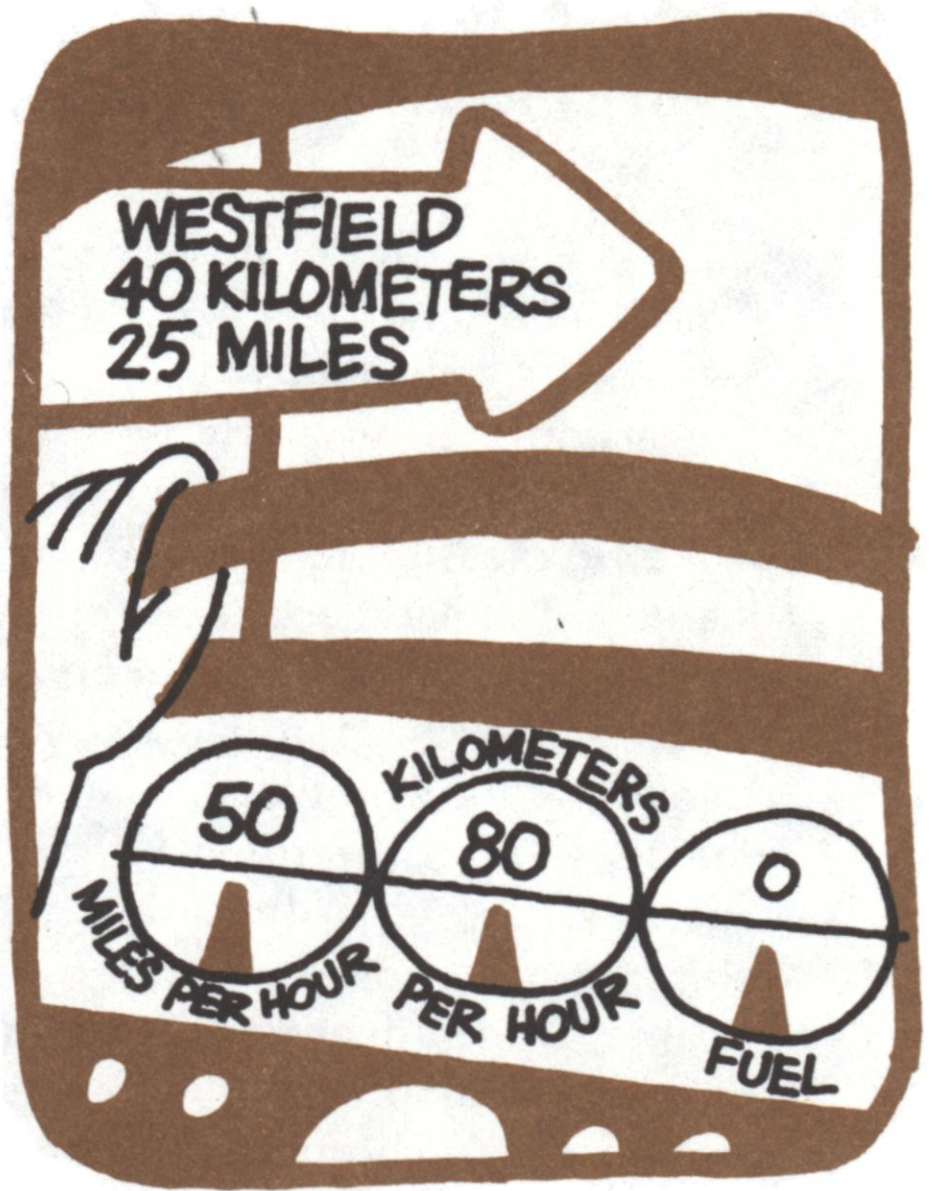
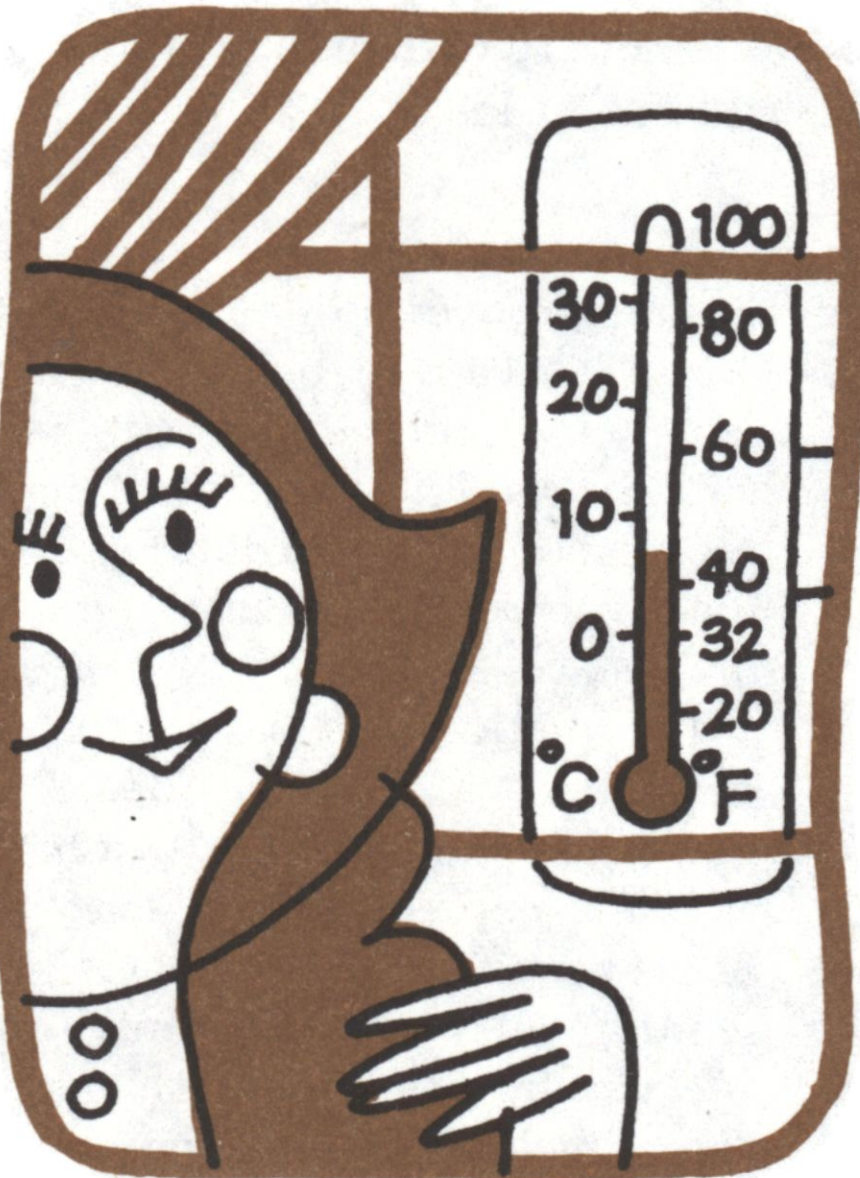
goal. It allows the development of a rational plan for a voluntary changeover. In this way, metric will come as the various sectors of our economy are ready for it—and not before.

In fact, metric has come to many sectors of American life over the past several years at an ever accelerating but erratic pace. Industry continues to take the lead in the private sector. At least 37 major corporations have announced policies to convert their operations. The total sales of these companies exceed \$130 billion, and the list contains four of the Nation's 10 largest firms. Some of the first metric-minded corporations included: Caterpillar Tractor, Chrysler, Ford Motor Company, General Motors, IBM, International Harvester, Minnesota Mining and Manufacturing, Travelers Insurance, and Xerox.

Whereas until just recently the metric changeover was found predominately among manufacturers with overseas interests, some of America's largest retailers have gotten on the bandwagon. Sears, Roebuck and Company, Montgomery Ward and Company, and J. C. Penney are notable leaders in this category.

As mentioned, another sector of American life that has seen growing use of the metric system is education. School systems in all 50 states have

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underway some type of metric activity. These activities include: making metric workshops available to teachers, providing guidelines for training of teachers, producing educational television programs, and specifying the use of metric as the primary measurement language in new textbook purchases. In more than 30 states this "trend" is reinforced by State legislation or by State school board action. In Maryland, for example, the State School Board adopted a resolution in August 1973, calling for schools to be totally metric by 1980. The State Department of Education has a well developed plan and a timetable to meet this objective.

The Congress recognized the schools' swing to metric in the Education Amendments of 1974, P.L. 93-380, which authorized a Metric Education Program to be managed by the U.S. Office of Education. Appropriated funds support model and demonstration projects aimed at improving the quality and extent of metric education. The Metric Conversion Act of 1975 also recognizes the need to train teachers and introduce metric into the Nation's classrooms. A representative of the educational community is included on the U.S. Metric Board.

The States are not limiting themselves just to metric education in schools. At the time of the signing of the bill a total of 13 states had erected some metric road signs; Georgia, Maine, and California had established State metric conversion commissions; California's Division of Oil and Gas had switched to using only metric units; Pennsylvania and Florida had cooperated with the Sun Oil Company in a pilot test to sell gasoline by the liter; North Dakota had adopted

metric signs for its State parks; and bills to coordinate metric conversion had been introduced into 18 State legislatures.

State and local weights and measures officials through their organization, the National Conference on Weights and Measures, have begun planning for the effects of metric changeover on commercial weights and measures activities. Working with this group, for which the National Bureau of Standards maintains the Secretariat, NBS has already equipped each State with a set of metric standards and laboratory instruments that are NBS-certified as to accuracy.

On the Federal level, various metrication efforts have been underway to meet immediate needs. Since publication of the metric study in 1971, NBS has maintained a Metric Information Office. The volume of inquiries and requests have grown steadily. In one 6-month period in 1975, NBS answered 20,000 letters and 2,000 telephone calls for information. More than 100,000 NBS Metric Kits have been prepared and are being sold through the Government Printing Office. A national speakers bureau was formed to meet a need for metric information from civic, homemaker, PTA, and other groups.

The U.S. Metric Board assumes many of NBS' public information functions, but the Bureau will continue to provide international metric coordination through the General Conference on Weights and Measures created by the Treaty of the Meter. It is at this Conference that the components of the modernized metric system, International System of Units (SI), are agreed upon by the participating nations. The Bureau

will also retain responsibility for maintaining the national measurement system, coordinating metrication with State weights and measures officials, and through its interaction with consumer, business, and scientific groups, assist the nation in the changeover to metric.

Activity in other Federal agencies is underway:

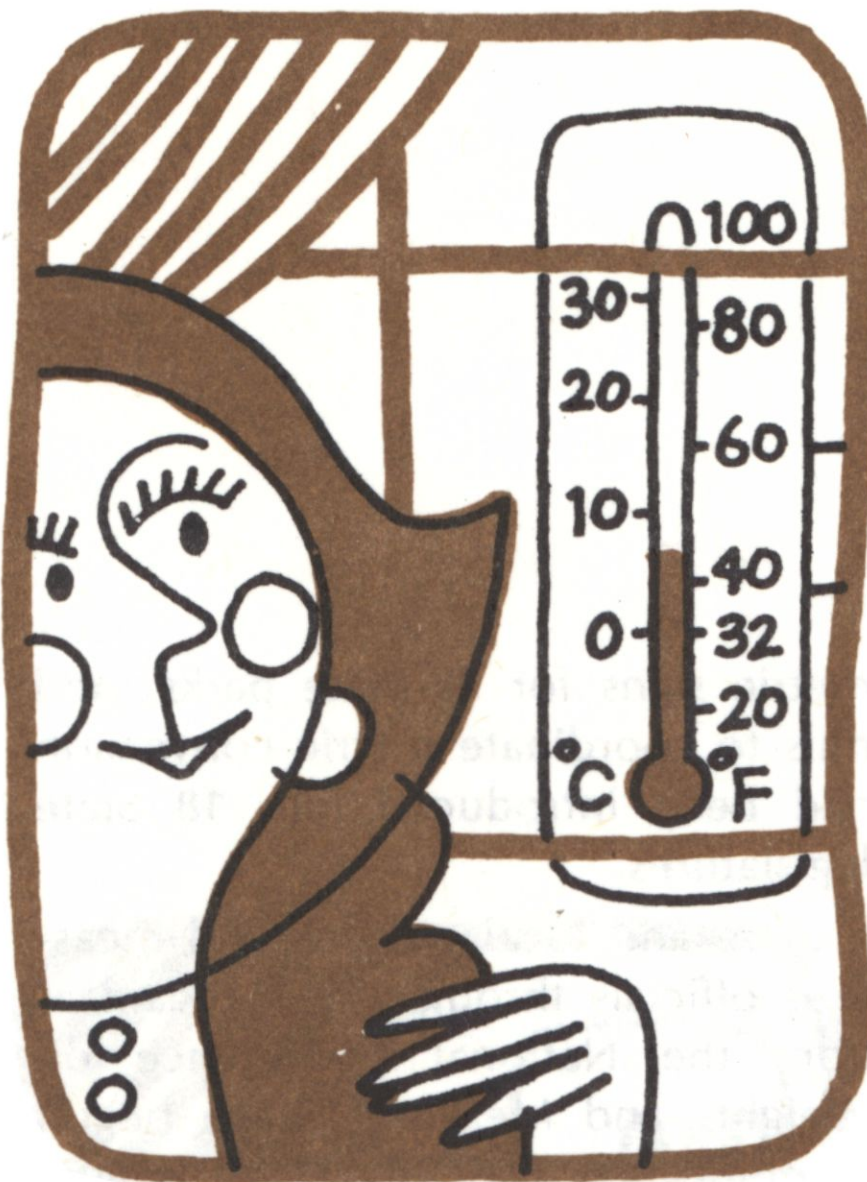
- The Department of Defense issued a policy statement in June 1975 that it would use metric when feasible, practical, and efficient.
- The Treasury Department, at the request of Industry, has held hearings on new regulations that would specify metric-sized bottles for distilled alcoholic beverages. There was no opposition to these regulations at the hearings. Similar regulations have already been approved for the wine industry.
- The National Aeronautics and Space Administration has been using metric units extensively for several years.
- The Interagency Committee on Standards Policy, chaired by the Department of Commerce, has established a Metrication Subcommittee to help coordinate Federal agency metric activities.
- Other Federal agencies which have initiated some metric activity—ranging from forming committees to using metric publications and signs—include the Department of Interior, Federal Highway Administration, Federal Housing Administration, Department of Health, Education and Welfare, National Weather Service, Maritime Administration, Forest Service, National Park Service, Agriculture Department, Patent and Trademark Office, Environmental Protection Agency, and Federal Communications Commission.

Just why is the United States going metric after having lived with the English system for more than 200 years? The answer is quite simple: We cannot afford not to.

All of our major trading partners have either gone metric or are in the process of doing so. In fact, the only countries still not committed are Brunei, Burma, Liberia, and Yemen. Before the 1975 Act, we literally were an island in a metric sea. The British Commonwealth countries, with whom we shared the pounds-quarts-yards system for so long, have all committed themselves to metric. This includes Canada, our closest neighbor, which has an unofficial goal of being all-metric by 1980.

Our industrial community has also seen the necessity for metric conversion as markets for American goods and services expand overseas. In order to do effective business abroad, these large corporations have had to dual-dimension their products, create a separate production capability to turn out metric products for export, or abandon customary design altogether and produce all products in metric dimensions. More and more corporations are doing the latter.

We are also seeing some barriers being erected to U.S. products in customary dimensions. The Common Market in 1971 adopted a directive that requires all exporters to the nine Common Market nations to indicate the dimensions of their products in metric units by 1978. Dual dimensioning will be allowed only if determined not to be confusing, with each nation to judge compliance separately. This action could bar American goods from these markets or could lead to costly relabeling of products.



Ultimately, it is in our national best interest to convert to metric. And there is a decided advantage for American industries that "go metric." In addition to opening up new markets, the benefits of standardization under the metric system will be realized in reduced inventories. Manufacturers will not have to keep on hand as many product lines to correspond with various size requirements. For example, the Treasury Department's new regulations, scheduled to go into effect in 1979, will reduce the number of "standardized" wine bottles offered in this country from 16 to seven. The U.S. fastener industry will replace 59 customary sizes with 25 metric sizes for threaded fasteners.

A question frequently asked is what effect this changeover will have on the average citizen. Everyone will be affected, but the disruption in normal living will be minimal. Experience in other countries suggests that the American public will have little trouble in mastering the few metric units it will need for everyday living.

Most persons will need to know only three measurement units—meters, liters and grams. A meter is a unit of length slightly longer than a yard; a liter is a measure of volume and is a little larger than a quart; a gram is a unit of weight about as heavy as a paper clip. Because gram

is such a small unit, it is easier to think about the kilogram (1000 grams), which amounts to a little more than 2 pounds.

Metric is a decimal system that uses multiples of 10, as does our currency system. Each basic metric unit can be multiplied or divided by factors of 10 to get larger and smaller units. These multiples and submultiples are indicated by prefixes such as kilo (one thousand), centi (one hundredth) and milli (one thousandth). Thus a kilometer means 1000 meters, a centimeter is 1/100 of a meter and a millimeter is 1/1000 of a meter.

Temperatures in metric are measured on the Celsius scale rather than Fahrenheit scale. (Celsius was formerly called Centigrade.) In the Celsius scale, water boils at 100 degrees and freezes at 0 degrees. This is easier to remember than in Fahrenheit, where water boils at 212 degrees and freezes at 32 degrees.

The changeover will create minimal confusion. Initially most items such as road signs and consumer goods will be labeled in both customary and metric dimensions. This is already happening with some automobile speedometers that are dually labeled. In the supermarket, canned goods will be labeled in both ounces and grams for a time (many are already) and eventually in grams alone.

The Metric Conversion Act of 1975 and the U.S. Metric Board which that Act creates will provide the necessary focal point for a smooth, coordinated conversion to the metric system in this country. No one will be forced to "go metric." But gradually, as each of our country's economic sectors see the desirability of going metric in a rational way, we will become a predominately metric nation. □