We're Going Metric—But Don't Worry

CLAIRE A. FOWLER

The world is "going metric"—and so are we. Nobody is forcing us to make the changes, but it will be to our advantage if we do. The changes will be spread over several years. This article is an introduction to the "new" units. They are not really new, but they may be new to you.

There are obvious advantages in having the whole world using the same units of measurement for length, weight, volume and so on. Most of the world realizes these advantages. About 140 countries have already changed to metric units or at least have started to change. In fact, there are only nine or ten that have not started to change. Papua New Guinea must keep up with the rest of the world.

So there will be changes—but don't let them worry you. Remember how difficult you thought it would be to change from £.s.d. to dollars and cents? Does it worry you now? Not at all. Would you like to go back to 12 pence = 1 shilling, 20 shillings = £1? Certainly not!

Although most people call them "metric" units the name being used increasingly overseas is "SI" units. This term covers a wide range of units, including those used in electrical and engineering fields. "SI" stands for "Systéme Internationale d'Unités". If you don't want to remember it in French, think of it as the System of International Units. That is not an exact translation; in the French version it is the system that is international, not the units. But when the system is really international, the units will be too.

There is a Metric Conversion Commission now established in Papua New Guinea, with its headquarters at Port Moresby. Several advisory committees have also been set up. One of these is the Rural Industries Advisory Committee and Mr E. D. Collins of Goroka is the Chairman. On this committee there are nominees of the various industries—coffee, rubber, cattle, forestry and so on.

The changeover to SI units will not be instantaneous, as the change to decimal currency was. It will be spread over a period of years. Advisory committees will tell the Commission when they are ready to change; the Commission will not dictate in this matter. Actually nobody will be forced to change to the new system, but eventually it will be easier to use the new units than the old ones.

For Papua New Guinea, the sooner the conversion comes the better. Each year there are more students leaving school and starting work than there were the year before. Life will be easier for everyone if, when they leave school, they are already acquainted with metres, kilograms and degrees Celsius, and so on. It will be better still if they don't have to "unlearn" yards, pounds and degrees Fahrenheit.

Actually we have already started using some metric units without realizing it. The familiar 44-gallon drum really contains 200 litres. For years Olympic swimming pools have been, not 50 yards long, but 55 yards. At least, that's the length we have thought they were. Actually are 50 metres long which is $11\frac{1}{4}$ inches short short of 55 yards.

And if you are in the habit of flying around Papua New Guinea and don't have your own private plane, you are allowed, you think, to take 44 lb of luggage with you for no extra charge. What you are really allowed, according to international rules, is 20 kilograms of luggage.

LENGTH MEASUREMENT

What is a metre, exactly?

In Paris in 1791, a committee was appointed to select new standard units for length and weight. They chose the metre as one ten-thousandth part of the length of a line from the North Pole, passing through Paris, to the Equator. A bar of platinum of this length was made to be the permanent standard metre, and it is still kept in Paris in the International Bureau of Weights and Measures. In the years since the bar was made, however, scientists have devised more accurate methods of measuring. These days the metre is defined in terms of the wavelength of light, and it is not exactly the same as was originally intended. Not many people are concerned about the difference, however.

Having one standard unit of length, the committee then proceeded to derive other units from it, all based on factors of 10. A tenth

of a metre is a decimetre but this is rarely used. A centimetre is a hundredth part of a metre and a millimetre is a thousandth part of a metre. Things usually measured in inches will in future be measured in centimetres. The easiest way to do the conversion without pencil and paper is to remember that 10 centimetres equal 4 inches.

For distances much longer than a metre, the standard is the kilometre. The Metric Conversion Commission has stated that it is to be pronounced with the emphasis on the first syllable, not the second (KILometre, not k'LOMetre).

A kilometre is almost $\frac{5}{8}$ mile. For a very rough approximation of distance, you can just halve the kilometre figure to get the number of miles. That is, a distance of 40 km is *about* 20 miles if you are going by car; but if you are going to walk it (and especially if you want to boast about walking it), it is 25 miles (40 x $\frac{5}{8}$). If you want to be very accurate, however, it is 40 x 0.621 = 24.84 miles.

What is a hectare?

The unit of area measurement will change from the acre to the hectare. A hectare is defined as an area equivalent to that of a square with sides of 100 metres. It is roughly $2\frac{1}{2}$ acres.

WEIGHT MEASUREMENT

What is a gram?

The metre was the only unit that the Paris committee chose. All the other units of both length and weight were derived from it.

The unit of weight is the gram, which is the weight of 1 cubic centimetre of water at 4°C. This makes it very easy to convert from weight to volume measurement for water, provided the temperature change is not very much. As in the case of the metre, more accurate weighing methods have shown that a gram is not *exactly* what it was supposed to be, but only specialist scientists are concerned about the difference.

It takes 28 grams to make 1 ounce so generally only scientists are concerned with fractions of a gram. The usual unit for shopping will be the kilogram (1,000 gm) which is 2.2 lb. So instead of buying 4 lb sugar you will buy 2 kilograms (4.4 lb) and you can expect the price of this amount of sugar to be 10 per cent higher than that for 4 lb.

Tons won't change much except in their spelling and pronunciation.

1000 kg = 1 tonne (rhymes with "John")
An old-fashioned long ton = 2240 lb
A new tonne = 2204 lb

VOLUME MEASUREMENT

Instead of pints, quarts and gallons there will be two units to learn for liquid measure —the litre and the millilitre. For all practical purposes, a millilitre and a cubic centimetre are the same thing, and 1,000 mililetres make a litre (pronounced "leeta"). A litre is just under a quart; 1 gallon = 4.5 litres. Eventually petrol pumps will deliver litres instead of gallons but this is not expected for several years yet.

A schooner of beer will still look the same and cost the same, only now it will be defined as 825 millilitres (usually abbreviated to "mls" and pronounced "mills").

WEATHER

The weather won't really be different under metrication, it will only sound different. The official changeover to Celsius temperatures has already been made, so no longer can we boast of a hot day as a century, since 100 deg. Fahrenheit becomes a mere 38 deg. Celsius. But we can boast about the rainfall like crazy! If you have a really wet night, don't tell anyone you had 8 inches; 200 millimetres sounds much wetter.

Most people don't care what the barometric pressure is anyway, but if you do care, 30 inches of mercury = 1016 millibars.

Celsius temperatures used to be called Centigrade—but in Europe, Centigrade means something else to some people, so the word will not be used for temperature. Anders Celsius was the Swedish scientist who worked out this temperature scale which has 0° for the freezing point of water and 100° for the boiling point.

CHANGES ALREADY MADE

Some changes have already been made without any serious difficulties. Tide heights are now reported in metres. Since September 1st, the Bureau of Meteorology has reported temperatures only in Celsius and barometric pressure only in millibars. The Department of Lands, Surveys and Mines measures land only in hectares.

The last Melbourne Cup over 2 miles has been run. This year's cup will be run over 3200 metres—60 feet shorter than in previous years.

3200 metres is the same as 3.2 kilometres. An 8-stone jockey will weigh in at about 50 kilograms.

There is one area where we might find some opposition to metrication. The glamorous blonde who shrugs her shoulders and says that she couldn't care less whether her measurements are in inches or centimetres, might change her mind when she finds out that her vital statistics have changed from 34-24-36 to 86-61-92!

FACTS TO REMEMBER

While undoubtedly it means more trouble for people to change than to keep on using the same units, cheer yourself up with the thought that from now on it will be easier when you have to help your children with their school homework. Didn't you have trouble remembering that there are 4,840 square yards in an acre and 640 acres in a square mile? And did you ever find out what a "rod, pole or perch" was? It doesn't matter now what it was; it's dead.

Your children will never have the problems that you had in arithmetic lessons. What they (and you) need to know now is that:

10 millimetres = 1 centimetre (two-fifths of an inch)

100 centimetres = 1 metre (just over a yard)

1000 metres = 1 kilometre (five-eighths of a mile)

A square 100 metres x 100 metres = 1 hectare ($2\frac{1}{2}$ acres)

1000 grams = 1 kilogram (2.2 lb)

1000 cubic centimetres = 1 litre (roughly a quart)

1 cc of water weighs 1 gram (1/28th of an ounce)

1 litre of water weighs 1 kilogram

The conversion figures given here are only approximate. When it gets near the time for the changeover, there will be plenty of information available on exact conversion rates for the people who really need them. The secret of easy adjustment, however, is not to use conversion figures at all if you can avoid it. Learn to think in SI units by remembering that a very tall man is about 2 metres, and he will weigh about 90 kilograms. On an average day in coastal Papua New Guinea, the maximum temperature is about 30°C and three stubbies of beer make a litre. You'll soon get used to it.

Revaluation of the Australian Dollar

On 23rd December, 1972, the Australian Government announced an upwards revaluation of the Australian dollar by 7.05 per cent. As Papua New Guinea uses Australian currency and comes largely within the Australian monetary system, this affects Papua New Guinea as if it were a state of Australia.

Before the change, $A1.00 was equal to $US1.191; after the change, $A1.00 could buy $US1.275. (United States currency is the leading World currency, and most other currencies are compared with it.) So Australian currency has now become more valuable compared with other currencies than it was before. Goods imported into Australia and Papua New Guinea now will cost 7.05 per cent less for us to buy. However, as most of our exports are rural products sold on world markets, we cannot alter the price of them, and we will have to accept an effectively lower price than we got before. So even though the world price for tea (in new British pence per lb.) and for rubber (in Singapore cents per lb.) stay the same, by the time that money which is owing to us for the sale of our produce is changed into our money (at the new exchange rate) we have got less than we would have got before.

Why did Australia do this? Over recent months, Australia has been having a boom period for exports which have consistently been worth more than imports. So much so, that Australia has accumulated a huge positive balance of payments of $A2,000 million dollars. It became obvious that the Australian currency was a very strong one, and was undervalued hence the change to bring the value of Australian currency closer to its real value.

Overall, in Papua New Guinea, this should have a good effect on the economy, as our imports are far greater than our exports. Our imports will now cost less. However our exports will also earn less income for us, which will mean less income for the primary producer.