UKMA news

The newsletter of the UK Metric Association

Campaigning for a single rational system of measurement

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In this issue:

Happy Easter!

Here's hoping all UKMA members had a very Happy Easter

Annual General Meeting

Date	4 July 2009
Time	AGM 10:00, Conference follows on.
Venue	London - Further details to follow.

From our Chairman:

Metrication in the media

"Since the decision of the EU to abandon its ambition for a single system of weights and measures throughout the EU, the serious media have lost interest in metrication. There was a brief flurry of publicity over the market trader successfully prosecuted by Hackney Council, but even that went quiet after she withdrew her appeal and Hackney dropped further charges.

There is an obvious and very real danger that, unless people are constantly reminded of the issue, they will become so accustomed to the "two systems" muddle that they will cease even to be aware that there are two separate, incompatible systems. So how can we keep the issue alive? One possibility is to link metrication to other higher profile issues – such as cluttered traffic signs, "units" of alcohol, or consumer protection. As the Government had announced its intention to deregulate package sizes for popular foodstuffs (in compliance with an EU Directive) from 11 April, this seemed an opportunity to stress a consumer issue, the importance of "unit pricing" – the small print at the bottom of shelf labels which gives the price per kilogram, litre or metre (or subdivision thereof). It was hoped that if more people could be persuaded to read the small print, there might be greater readiness to think in terms of metric units and prices – and perhaps less resistance to phasing out imperial prices in small shops and markets. At least that was the theory....

But then...

So a press release was prepared, targets within the print and broadcast media identified, and the press release sent out electronically on 7/8 April, embargoed until 10 April. The fact that this coincided with a bank holiday weekend should have been helpful, since normally there is otherwise little domestic news apart from the teachers' union conferences.

The response has been disappointing. As far as I know, none of our material has been used by any newspaper or magazine (though the specialist consumer magazines have yet to appear). Nothing whatsoever from television, and nothing from national radio except BBC Radio 5 Live, who, after cancelling an earlier interview, eventually interviewed UKMA Secretary, Derek Pollard.

The main interest – such as it was – came from BBC local radio. The BBC's General News Service (GNS) picked up the item from the press release, but, infuriatingly, instead of simply forwarding the press release to local radio stations, did their own précis of it (it was only 1½ sides of A4 in the first place), and in doing so garbled the story so that most of the local presenters got completely the wrong end of the stick. Most treated it with levity as another EU-bashing opportunity, and I had some difficulty in correcting the story without actually alienating the presenter.

The best interviewer was Ed Doolan at Radio WM, who had the advantage that he actually does a consumer programme, asked sensible, penetrating questions, and I was able to speak as the friend of the consumer. Other telephone interviews, as far as I can remember (as it was fairly hectic), were with Radios Oxford, Devon, Newcastle, Bristol and Somerset. Radio Scotland pulled out at the last minute, and Radio Solent did the dirty on me by calling me in to their Portsmouth studio, recording the interview (although I had been promised it would be live), and then failed to broadcast it. Instead they did a puerile phone-in, during which callers were invited to make silly suggestions such as that the "mile high club" would have to be renamed the "one point six oh nine three kilometres club". Presumably, the producer thought this would be more entertaining than serious advice to consumers. So much for the BBC's mission to 'inform, educate and entertain'."

Shoppers to be confused by 'free-for-all' in package sizes?

Government failure to issue advice to consumers will put shoppers at a disadvantage when the packaged goods regulations change next week – so say the UK Metric Association (UKMA). From 11 April, As a result of a European Directive, all standard sizes for packages (including bottles, jars, tins, packets and aerosols) will be abolished – except for wine and spirits – and firms will be free to change package sizes as often as they like.

UKMA Chairman, Robin Paice, said: "The obvious danger is that unscrupulous firms will downsize their packets without reducing the price - a hidden real price increase. The Government has removed a form of consumer protection without explaining to shoppers how they can avoid being ripped off."

Background

Until now many of the most common foods may only be sold in standard size packets or bottles. For example, jam and honey may only be packaged in multiples of 113 g (equivalent to an old quarter pound) and butter in multiples of 125 g, whereas milk may be sold in multiples of either pints or litres. Shoppers can therefore be sure that the package size remains the same and they would notice any price change.

However, under European law, if a package size is legal in one member state of the EU it can be exported to any other member state – with the result that French jam and honey can be sold in the UK in non-UK standard sizes. In order to sort out the resulting muddle, the European Commission was asked to come up with a solution. They could have tried to impose standard sizes at the European level, but – fearing opposition from manufacturers and retailers – they prudently chose to deregulate instead – that is, they proposed banning national rules on fixed sizes. After some debate, the European Parliament and Council of Ministers then agreed the Directive.

Unit pricing

One of the arguments used by the Commission was that standard sizes are unnecessary since in larger shops all price labels must show not only the price per package but also the "unit price" –

that is the price per kilogram (kg) or per 100 g (or per litre (L) or 100 mL in the case of liquids). Therefore, it was argued, consumers could make value for money comparisons of packets and tins of different sizes. For example, a package containing 400 g and priced at £1.80 would have a unit price of 45 p/100 g, whereas an apparently cheaper package containing 340 g and priced at £1.60 would actually have a higher unit price – 47 p/100 g.

Opponents have argued that there are two flaws in this argument. Firstly, although all shops and market traders must show the unit price for "loose goods", the requirement to show the unit price for packages does not apply to shops smaller than 280 square metres. Secondly, research* has shown that most shoppers do not use the unit price – either because they do not understand the concept or because they cannot read the small print at the bottom of shelf labels. They therefore do not benefit from the protection that unit pricing is supposed to provide.

Publicity campaign needed

UKMA believes that what is needed is a Government-led campaign to publicise the change in the law and explain to consumers the purpose and importance of the unit price information at the bottom of shelf labels. A possible slogan would be "For better value, read the small print."

Robin Paice added: "This would have the added benefit of helping people to become more familiar with metric units and perhaps reduce the senseless resistance to the changeover to the metric system as the primary system of measurement in the UK."

Excerpts from Lord Howe's article in TSToday magazine

As an honorary vice president of the TSI, and respectful reader of TS Today for many years, it's taken me some time to find the courage to proclaim just how shocked I was to see the amount of space given over in its November metrology feature to the myths, misinformation and illogical arguments of the last-ditch defenders of obsolete imperial measurements. I was saddened; too, to see that a representative of TSI itself appears to be so confused about what the position of a responsible professional institute ought to be on the question of metrication.

But there's one overwhelming reason why I simply have to speak up in this way and that is, I am sorry to have to say, that I have to accept much of the responsibility for the 'very British mess', in which we all still find ourselves For, as Britain's first Minister for Consumer Affairs (in the Heath Government, 1972-74), I was also the Minister for Metrication — and the process which had started some seven years before, with general approval, was going well. So well, indeed, that when I was next in office, in 1979, the Metrication Board reported that the change was nearing completion and, as Margaret Thatcher's -Chancellor of the Exchequer, I was only too eager to prune public expenditure, by abolishing the Board. And ever since then we've been dragging our feet – at substantial economic and social cost.

Which is why, for the past six years, I have been an active patron of the UK metric Association, campaigning – along with scientists, educationalists, business leaders and consumer representatives – for early completion of this vital item on the national agenda. And it's why I dare to take advantage of my position as an honorary vice president of TSI by seeking the support of the Institute and its membership.

One system or two?

If it is the duty of a responsible professional institute (such as the TSI) to offer guidance to the government and the general public on matters on which they possess some professional expertise, what should that guidance be?

The late Chris Howell, the former and much-missed TSI lead officer on metrology (and UKMA member), once remarked: 'everybody needs a system of measurement: nobody needs two systems.'

And of course he was right. I am sure I do not need to rehearse in detail the arguments for a single, legal system understood and used by everybody for all purposes. This is necessary for consumer protection, designing buildings, specifying engineering components, prescribing medicines, signposting distances, fixing speed limits and forecasting the weather. In all these instances, clarity and precision are essential. Failure to communicate clearly can result in mistakes, waste, accidents and incomprehension. Just as clarity of verbal communication requires that everybody understands and uses the same language, so communication about dimensions and quantities requires that everybody uses the same units of measurement.

Which system should we standardise on?

I am equally sure that trading standards professionals need no convincing of the technical superiority of the international metric system ('SI') over the random collection of medieval and Roman units that have survived by chance into modern times and are still used by about five per cent of the world's population. Quite apart from the ease of calculation in decimal numbers, the relationships between SI units reflect the underlying physical relationships that they represent and thus reinforce our understanding of the physical world. Given the concern about low standards of science education in the UK, this is not a trivial point.

The clinching argument for choosing metric over imperial units (if we want to standardise on a single system) is that, while it is quite possible to phase out imperial units for almost all legal, trader and official purposes, it would be quite impossible to phase out metric units (not that anybody is seriously suggesting that) since science and technology depend on them and most of the rest of the world uses these units and we would have to continue to accept their exports and their product specifications for our own exports.

So the only rational conclusion that a professional institute concerned with weights and measures should draw is that (a) we should standardise on a single measurement system and therefore phase out other units; and (b) the standard system chosen should be metric.

Problems for trading standards

Trading standards professionals have a difficult job – especially in dealing with that minority of shopkeepers and market traders who are so misguided as to defy the law on weights and measures. Their job is made all the more difficult by the lack of encouragement that they get from elected politicians – both national and local – as well as from the tabloid media, who for many years have consistently misrepresented an misreported the issue and turned it into an issue of national identity which, of course, it is not.

Trading standards professionals must have been dismayed at reports that a government minister actually appeared to be asking them to stop enforcing the law for which he is responsible – apparently on the grounds that it is not in the public interest to prosecute people for 'minor offences' (one wonders whether this doctrine would be extended to other fields – shoplifting, perhaps?).

A responsible institute

In its response to the recent consultation on reforming weights and measures law and of its enforcement, the government has claimed (not quite accurately) that none of the stakeholders has raised the question of completing metrication. From this they claim a mandate for not addressing the issue of a single system of weights and measures. Thus, the near-silence of stakeholders helps to prolong the current 'two systems' muddle.

I hope that, overwhelmingly, the view will be that a responsible institute should not be 'neutral' on an important matter of public policy within its field of professional expertise and that TSI should be publicly supporting the completion of the metrication process as soon as reasonably practicable. They might also perhaps quote the original Runnymede text:

> *'Let there be one measure throughout our whole realm; one measure of ale; one measure of corn and one width of cloth; of weights also let it be as of measures'.*

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First, the bad news...

New FHWA policy: metric is now optional

On 25 November 2008, Jeffrey F Paniati, Executive Director of the Federal Highway Administration FHWAJ issued the following memo:

"The FHWA is modifying its policy on the use of metric measurements in its daily activities. The use of metric measurements will now be optional in all FHWA documents, including letters, memoranda, publications, reports, and information on FHWA Web sites.

"The FHWA has long supported the conversion to metric measurements. with Section 5164 of the Omnibus Trade and Competitiveness Act of 1988 and Executive Order 12770, issued by President George H. W Bush on July 25, 1991, we developed a 5-year Metric Conversion Plan for highway documents and plans. By 1995, the vast majority of State departments of transportation (DOT) indicated they would comply with FHWA's conversion completion date of September 30, 1996. As a result, they expended considerable financial resources to convert design, contracting, and other documents, such as Standard Specifications, from the inch-pound system to metric measurements in compliance with the Metric Conversion Plan.

"For the Federal-aid highway program, the momentum established by the plan came to an end in 1995. Section 205(c)(2) of the National Highway System (NHS) Designation Act of 1995 prohibited us from requiring any State DOT to use the metric system during project development activities. Although the State DOT's had the option of using metric measurements or dual units (metrics/inch-pounds), **all of them abandoned metric measurements** and reverted to sole use of inch-pound values.

"Our most recent guidance on this subject was contained in a memorandum dated June 1, 2001. It explained that Section 5164 of the 1988 Act requires all Federal Agencies to use the metric system in their procurements, grants, and other business-related activities except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms. Therefore, FHWA continued to use metric measurements in our daily business activities except in documents intended for a broader audience, such as the general public, when dual units (metric values followed by the inch-pound value in parenthesis) were appropriate.

"Given that all our partners have abandoned metric measures, we have concluded that continued mandatory use of metric measurements in FFP's daily business activities is impractical. Accordingly I am rescinding the prior guidance, dated June 1, 2001, on this issue. The use of metric measurements is no longer mandatory in our daily business activities. Each office may use its own judgment on the value of metric measurements or dual units based on the audience for each document. For offices that wish to use dual units, we encourage a reversal of past practice by presenting them in the format of inch-pound value followed by metric value in parenthesis.

"Under the NHS Designation Act, State transportation officials may continue to decide whether to prepare documents using the inch-pound system, metric measurements, or - dual measurements. This flexibility applies to all documents developed in compliance with Federal-aid requirements, including the National Environmental Policy Act and other environmental requirements." MT

Second, better news...

NASA's constellation program is metric

In January 2007, NASA announced that it would use metric units for operations on the lunar surface (see Metric Today, March-April 2007). The organization later issued a Constellation Program

Management Directive titled, "Use of SI as the Primary System of Measure for the Constellation Program, Projects, Systems, and Mission." NASA provided a copy of that internal document to USMA Webmaster Don Hillger.

The Constellation Program, consisting of the Ares launch vehicle and Orion crew capsule, will eventually replace the space shuttle and, with the Altair Lunar Lander, explore the lunar surface. The aforementioned directive, issued on 19 December 2007, specifies as its purpose that "this directive establishes the International System of Units as the standard and default unit of measure of and throughout the Constellation Program (CxP). Narrow exceptions are defined where mixed use of English and SI units may be continued for legacy hardware, engineering, or fabrication."

It goes on to explain that "this directive applies to all constituents and aspects of the CxP, including organizations, personnel, missions, systems, products, processes, plans, operations, communications, data, documents, hardware, software, contracts, contractors, vendors, and deliverables." Its rationale: "A consistent practice of units throughout the CxP lifecycle is critical to mission success. CxP will be a leader in the transition of NASA and U.S. aerospace from English to SI." Among other reasons, it mentions "use of a system that is simpler and less error prone" as well as "alignment with our international space partners, increased international competitiveness of the U.S. space industry, and consistency with U.S. education and skills of next- generation space workers."

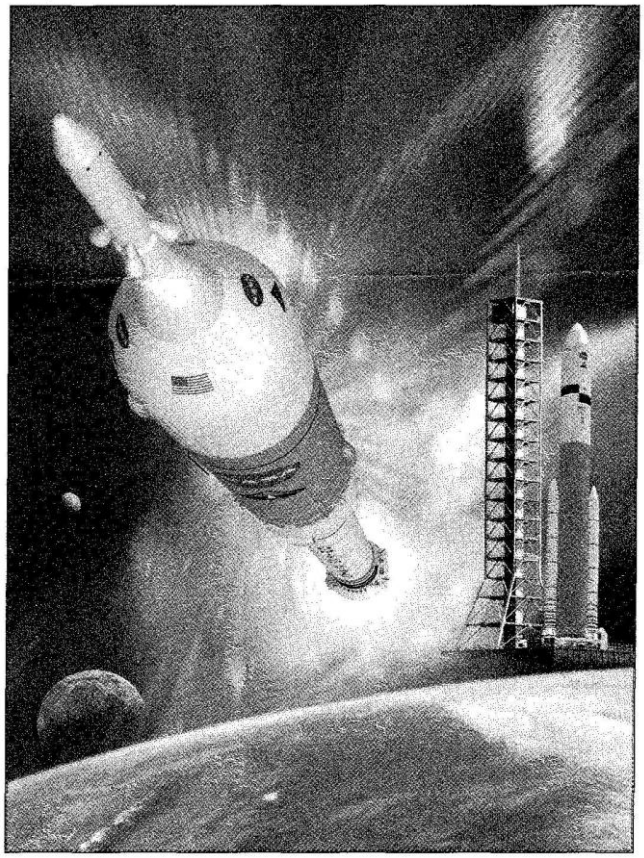


Image courtesy NASA/MSFC

The policy itself states that "SI is the CxP standard and default system of measure. Limited exceptions are allowed only as identified in this directive, and as defined and approved through program and project implementation plans." In general, everything is metric—The CxP will 'fly' in SI"— except for some cases involving reuse of legacy hardware, which may involve non-metric or dual-dimensioning, hut "this exception does not allow for the creation of English- only modules/elements (i.e., islands) within a project." This also includes things like flight software—specifications, design, test, etc. in SI; major legacy subroutines/objects may remain in English with conversions carefully managed"— and "public information will be in SI with English in parentheses."

There will, of course, be the occasional non-metric unit considered acceptable, such as rpm, where the pure-SI (radians per second) isn't always simpler. Buildings and non-flight structures will likely be conventional, non- metric construction: "For such elements that do not have direct interfaces with flight hardware this is an acceptably low risk." MT

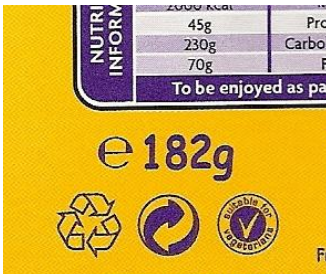
This concept image shows the Ares I crew launch vehicle during launch and the Ares V cargo launch vehicle on the launch pad. Ares I will carry the 5-meter-diameter Orion capsule and its crew of 6 to Earth orbit; 98 meters tall and with a gross liftoff mass of 910 metric tons; Ares I can ferry 22 metric tons into Earth orbit. Ares 1/ 109 meters tall and

3310 metric tons, can transport up to 131 metric tons into low Earth orbit or up to 53 metric tons for trans-lunar injection—e.g., carrying the lunar lander; not shown here, which will carry a crew of4 plus 20 metric tons of cargo for a 7-day stay on the moon.

Product sizing and descriptions

Following the Easter theme from page 1, have any UKMA members noticed the sizes of Cadbury's easter eggs this year?

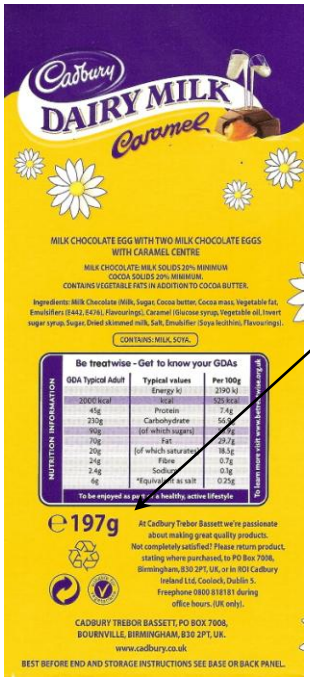
Why 182 g? Why not 180 g? Can anyone measure that 2 grams (sorry for anyone who prefers grammes)?

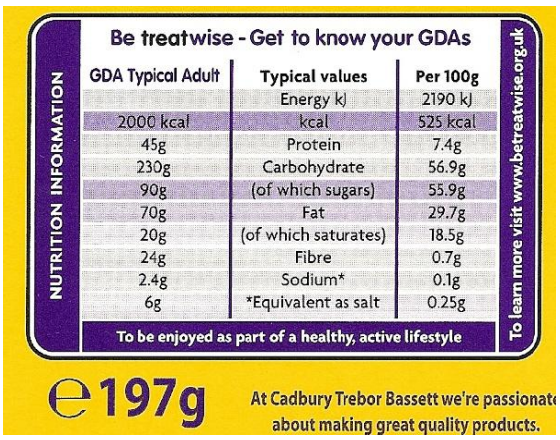


Here's another one:

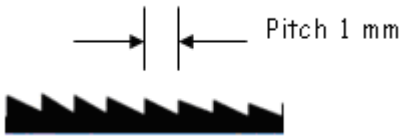
Another easter egg, again from Cadbury is shown as weighing 197 g. Here, surely 200 g is a more useful indicator, especially as the GDAs are shown per 100 g!

Perhaps the weighing equipment on Cadbury's production line is accurate to the last gram, but not the scales most consumers will have!





How about this for sheer nonsense?
Completely non-metric thinking - just conversion, but for whose benefit and what purpose?
How about this instead?



Then how about this:

Does anyone measure toilet wipes to this level of accuracy:

18 cm x 25 cm should be enough shouldn't it?

What's the proper symbol for...?

Knowing the correct symbol for litre or kilometres per hour is simplicity itself for all UKMA members, of course! Not so easy for the average person, however.

Where does one go for this information? Most people may not even care, but marketing people, product packaging people, etc. surely should care if they are doing their job properly. No doubt no one would want their product to be named incorrectly so why should there be a problem with measurement symbols?

Maybe it's too difficult to find out that the symbol for litre is l (or L) not ltr, so how about a handy crib sheet, a bit like the charts and tables to be found in the back of diaries? How about this?

(an adaption of the excellent USMA style sheet)

Common metric units

	Name	Symbol
length	metre	m
	kilometre	km
	centimetre	cm
	millimetre	mm
area	hectare	ha
	square metre	m^2
weight (or mass)	gram	g
	kilogram	kg
	tonne	t
volume	litre	L
	millilitre	mL
pressure	kilopascal	kPa
velocity	kilometres per hour	km/h

Familiar points on the Celsius **temperature scale** are:

	°C
Temperature at which water freezes	0
Temperature at which water boils	100
Normal body temperature	37
Comfortable room temperature	20-23

Prefixes

Some of the metric units listed above include prefixes such as kilo, centi, and milli. Prefixes, added to a unit name, create larger or smaller units by factors that are powers of 10. For example, add the prefix kilo, which means a thousand, to the unit gram to indicate 1000 grams; thus 1000 grams become 1 kilogram.

Capitals

Units: The names of all units start with a lower case letter except, of course, at the beginning of the sentence. There is one exception: in "degree Celsius" (symbol °C) the unit "degree" is lower case but the modifier "Celsius" is capitalised. Thus, body temperature is written as 37 degrees Celsius.

Symbols: Unit symbols are written in lower case letters except for litre and those units derived from the name of a person (m for metre, but W for watt, Pa for pascal, etc.).

Prefixes: Symbols of prefixes that mean a million or more are capitalised and those less than a million are lower case (M for mega (millions), m for milli (thousandths)).

Plurals

Units: Names of units are made plural only when the numerical value that precedes them is more than one. For example, 0.25 litre, 250 millilitres.

Zero degrees Celsius is an exception to this rule.

Symbols: Symbols for units are never pluralised (250 mm = 250 millimetres).

Pronunciation

The first syllable of every prefix is accented, not the second syllable. Example: KILL-oh-metre, not kil-LOM-metre.

Incorrect terms

The prefix "kilo" stands for one thousand of the named unit. It is not a stand-alone term in the metric system. The most common misuse of this is the use of "kilo" for a "kilogram" of something, also "degree centigrade" is no longer the correct unit term for temperature in the metric system; it has been replaced by degree Celsius.

Spacing

A space is used between the number and the symbol to which it refers. For example: 7 m, 31.4 kg, and 37 °C.

Spaces are not used between prefixes and unit names or between prefix symbols and unit symbols. Examples: milligram, mg; kilometre, km.

Full stop

DO NOT use a full stop with metric unit names and symbols except at the end of a sentence.

Decimal Point

The dot is used as the decimal point within numbers. In numbers less than one, zero should be written before the decimal point. Examples: 7.038 g; 0.038 g.

Snippets from the blog (for non PC users)

Snippet 1

UKMA member John Murray saw this on Tesco's website (www.TescoDiets.com) He wrote this to them:

Dieticians- I weigh 67 kg. How many stones (or pounds and ounces) is that? Let's get up to date- all kids at school use metric: why should we change when we grow up? (I am 77 yrs old by the way) BMI is easy to work out in metric, but the website ONLY has old fashioned stones and feet etc.

They replied:

Thanks for the email. We are revamping the site at the moment and people will have the option to change their measurements then. 67kg is 10 stone 8 lbs.

Kind regards,

Catherine Matthews

Nutritionist

Editor's comment:

Good for you John, what do you imagine will be the default units when Tesco eventually get around to changing their website??

Will they turn the tape measure arount so that centimetres are shown on the outside??

Snippet 2

From UKMA member John Jones's correspondence with the Highways Agency:

Subject: Road signs on the M20 approach to the Channel Tunnel at junction 11a

Could I question the legality of the signs as you approach the exit to the Channel Tunnel which show the exits at '1/3 m' and '2/3 m' ahead but with embedded images on the same signs of the height restriction for the Channel Tunnel also shown as a figure followed by 'm'. The first two of these 'm' presumably stand for 'mile' and the height restriction for 'metres' but how can you possibly authorise the use of the symbol 'm' to mean two different units of measurement on the same signs, especially as the symbol 'm' means 'metre' and nothing but 'metre' both domestically and internationally?

What is the legal basis for using 'm' to mean 'mile' on signs at all?

I am intrigued to know what the Highways Agency thinks is the right abbreviation for 'miles'.

The reply:

Dear Mr Jones,

M20 Junction 11a – Motorway Signage

The information that you have provided about the signage located on the M20 prior to the Euro Tunnel exit has been passed to our Design Team Manager. He has informed me that the signs are showing the wrong abbreviation for 'metres' and 'miles'.

These signs were designed and made by the contracting company who were in charge of the constructing of the Euro Tunnel approximately 15 years ago. Therefore, all designs and construction decisions would have been made by the Department for Transport.

This matter will be investigated further and any changes recommended. However, in order to carry out these changes funding will need to be bid for and designs put forward for new signage to be installed.

Unfortunately, bidding is a lengthy process. The bid process involves the actual bid for the improvements, the design and finally the works. If the bid is successful our design team will then create the design, which the works will be based on. After this a safety audit is carried out on the design to establish whether there are any hazards involved in the works. The works are then passed to the construction team to programme in our future works.

I will keep you updated with further information when it becomes available. In the meantime please contact me if you require any assistance.

Kind regards,

Amy Arnold

Sussex Customer Care Officer

On behalf of the Highways Agency

Editor's note:

Couldn't help myself from highlighting the words "bidding is a lengthy process" No doubt this will take until the DfT decides to change all road signs to metric!

Snippet 3

Terry (otherwise known as metric-trade) says:

For over two years, I have been complaining about the Scottish Executive property pages breaking the law: www.scottish-property.gov.uk was showing prices per square foot without reference to a metric price.

Like many of these summary websites, they have 'information suppliers' (estate agents) using a standard form provided by the website. The main problem is that the information suppliers usually enter imperial data in a 'price field' and fail to provide the metric equivalent. The website software is developed by a subcontractor.

Following my complaints, there have been discussions with Trading Standards, the Scottish Executive and the subcontractor. The subcontractor has now launched new code so that imperial prices in the 'price field' will be converted automatically. I am pleased because I regard that as a victory for the campaign to metricate property prices.

One minor niggle is that the website uses 'psm' as an abbreviation of per square metre. It is being used to match the imperial term 'psf' for per square foot. That appears to be the solution wanted by the Scottish Executive or its subcontractor. The Trading Standards Officer mentioned that there was some advice from www.berr.gov.uk that said imperial and metric terms should match. He didn't seem to think it was ideal but he was going to accept it and close the case. I agree with him, the terminology isn't ideal but the Scottish Executive is now taking metrication of property prices seriously.

The Trading Standards Officer said that he will tell the Scottish Executive to inform its information suppliers (estate agents) of the legal requirement relating to metric units. Thus metrication of that one website might produce ripples of metrication into the community of estate agents. I regard that as a second good outcome.

Editor's comments:

This is another example of good work by a UKMA member. Cannot agree with BERR (Department for Business Enterprise & Regulatory Reform) though, surely psm is as bad and as confusing as kph for km/h and gsm for g/m^2.

