

# **Weights and Measures: Britain's Way Ahead**

*A report written for the Customary Measures Society  
in 2005 - by ARM Secretary Tony Bennett M.A.,  
with ARM Chairman Derek Norman*

This report was published by the Customary Measures Society, January 2005, being in part a response to the UK Metric Association's Report: 'A Very British Mess', which demanded the compulsory metrication of all Britain's weights and measures.

Our report contained proposals for the future of Britain's weights and measures. One of our proposals – the reintroduction into British schools of teaching about Britain's weights and measures, has already been implemented, by the Coalition Government elected in 2010.

Our publication also celebrated five years of resistance to the British government's decision to make it a crime to sell in pounds and ounces – and five years of active opposition to the government's plans to tear down Britain's two million roads signs in miles and yards and replace them with signs in kilometres and metres. Just one year after our report was published, the government gave way and abandoned these plans (see report elsewhere on this page: 'The Moment the Mile was Saved').

Below is our report exactly as published in January 2005.

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## Summary of Report

Below we list the key points of our report:

- **USE** Independent consumer surveys, and the evidence of our own eyes and ears, show continued strong use by British people of customary weights and measures, especially in day-to-day life. Children and young people are familiar with customary measures and use them almost as much as adults do (Section 2)
- **PREFERENCE** Several independent consumer surveys conducted over the past seven years also show continued strong preference for customary weights and measures. This is especially so in relation to keeping road and pedestrian signs in miles, yards, feet and inches, rather than switching to kilometres and metres. According to the most recent survey, support is running at 11 to 1 in favour (Section 3)
- **UNPOPULAR CRIMINALISATION** Making the sale of loose goods by the pound a crime has been deeply unpopular - and costly (Section 4)
- **NEW CRIMES WITH SEVERE PENALTIES** The recent report of the U.K. Metric Association (UKMA) recognises that the only way of forcing British people to accept wholesale metrication is to create a whole swath of new crimes. Selling 7" pizzas, 12 oz. steaks and 7" x 5" photos would all be outlawed if the UKMA had its way.

Also banned would be describing the length of your living room and your garden in feet, your office space in square feet - or the land around your farm in acres. UKMA even wants to ban the use of customary measures in all advertisements (Section 5)

- **THE FAILURE TO TEACH CUSTOMARY MEASURES IN SCHOOLS** Most schools ignore the customary measures that their pupils use at home and in the playground day in, day out, and teach only metric units. Even UKMA concedes that children stop using metric units once they leave school. Most teachers barely conform to the requirement in the National Curriculum to teach the customary unit equivalents of metric weights and measures - while 'politically correct' OFSTED inspectors ensure that metric is taught, but ignore the Curriculum requirement to teach customary units alongside metric (Section 5)
- **COSTS OF CONVERTING ROAD SIGNS TO METRIC** It would cost £1 billion or more to convert British road signs, including all speed limit and distance signs, to metric (Section 6). Literally thousands of ancient road and footpath signs and mile posts would have to be destroyed. Such a proposal is wholly unnecessary. The government should immediately announce the abandonment of all planning for it (Section 6). The 'safety' argument for keeping supplementary information in metric on road signs does not hold up, because dual signing is confusing and inconsistent. Continental lorry

drivers use the Truckers' Road Atlas which gives the height of all low bridges exclusively in feet and inches (Section 6)

- DEMOCRACY Proceeding with further compulsory metrication would be undemocratic. Governments have consistently promised over the past four decades that metrication would be 'voluntary' (Section 7)

- 'CULTURAL VANDALISM' Proceeding with compulsory metrication would be an act of cultural vandalism, eliminating a tried, tested and trusted weights and measures system which has been in use in Britain for over 2,000 years and is therefore an integral part of our national history (Section 8)

- THE EUROPEAN UNION ASPECT The only legal obligation on Britain is to 'set a date' for conversion to metric. We could avoid any further unwanted metrication by setting a date ahead of, say, one billion years ahead, for converting our road signs to metric or abolishing the pint. European leaders have claimed that our use of customary measures gives Britain an 'unfair competitive advantage' in our trade with the United States because the U.S. use a similar system of weights and measures (see Foreword by Vivian Linacre, President of BWMA). It is ridiculous to suggest that having road signs in miles and drinking beer by the pint gives us 'an unfair competitive advantage' (Section 8)

- BRITAIN'S WAY AHEAD The 'way ahead' for weights and measures would include the following measures:

(a) end prosecutions of traders for selling in pounds and repealing the law under which they have been prosecuted (Recommendations)

(b) repeal the Regulations which force traders to weigh and sell in metric and which will ban the display of the word 'pound' in shops after 31 December 2009 (Recommendations)

(c) re-introduce labelling of most retail products in both customary and metric units - as is the practice in the United States - thus enabling the majority of customers who use and prefer pounds and ounces (and other customary measures) to understand much more easily the true weight and value of the produce they are buying (Recommendations).

For more information:

Customary Measures Society,  
Tel: 07835 716537  
Ask for Tony Bennett

e-mail: [ajsbenett@btinternet.com](mailto:ajsbenett@btinternet.com)

*"The human brain does not operate like a computer; it needs familiar, quantifiable units of measure"* - Philip Ivey-Ray, August 2004

## **Main Recommendations:**

### **Britain's Way Ahead – Our 12-point plan**

These are our proposals, which we invite the next government to adopt:

#### 1. Loose Goods - Ending of Criminal Penalties

We call for an immediate suspension of all action to enforce the compulsory weighing and sale of loose goods in metric

#### 2. Repeal of 1994 Regulations

We call for the repeal of the 1994 Units of Measurement Regulations. We also call for an indefinite 'derogation' from any other measure in Directive EC/80/181 under which Britain is required to convert to metric units

#### 3. Dual labelling of packaged goods and the re-introduction of 'dual customary/metric weighing machines

Dual labelling of the weight of packaged goods sold in shops should be introduced within a reasonable lead-in period (goods for export would still, of course, need to comply with the importing country's requirements).

After a transitional period, displaying metric could be phased out. The cost of adding another measurement on a packet or tin is minimal. Packaged goods in the United States are dual labeled

#### 4. Repeal of the ban on displaying the word 'pound' in shops after 2009

We call for the immediate repeal Regulations banning the display of information in pounds and ounces in shops after 31 December 2009

#### 5. Changes in the National Curriculum

We call for the National Curriculum to be amended to ensure that children are taught customary and metric units in equal measure (as is the case in the United States) and are not forced to use only metric in class, e.g. when preparing recipes, making things or drawing up plans

#### 6. Relaxing the ban on customary measures for officials

We call for the immediate relaxation of laws requiring officials to use metric only in official documents.

#### 7. Relaxing the ban on customary measures for architects and builders

We call for architects to be allowed, once again, to draw up plans in customary units, and for builders to be able to use customary units.

#### 8. Changes to the Highway Code

We call for the next edition of the Highway Code to omit all references to metric measurements, in order to avoid confusion.

#### 9. Public information signs to be primarily in customary units

We call for all public information signs, e.g. at the entrance to publicly-owned country parks or historical buildings, to use customary units.

#### 10. All swimming pools to show depths in feet and inches

We call for all present and future swimming pools, in the interests of safety, to be required to display depths in customary units. We do not call for an end to displaying depths in metric units. Both should be used

#### 11. Leave road signs in customary measures

We seek a commitment by the government to leave road and footpath signs in customary units indefinitely. Staff in the Department for Transport, currently planning metrication, could be redeployed to useful work

#### 12. Phase out optional metric signs on British roads

We call for the repeal of the current option (currently used only by a handful of local authorities) to allow metric roads signs, in very limited circumstances, to accompany signs in customary units.

## **A. Foreword by Vivian Linacre, FRCS, FCA, President of British Weights and Measures Association**

The UK Metric Association and its solitary spokesman Lord Howe no doubt agree with this statement made in Brussels to the British Weights and Measures Association during correspondence and discussions in 1996-7 with Martin Bangemann, the EU Commissioner for Industry, and his Metrology Unit: "The UK is in an anomalous position, being a full partner in the EU yet sharing a common system of weights and measures with the USA, so gaining an unfair competitive advantage in transatlantic trade", and also with the government's response, to the effect that: 'Yes, it is iniquitous that Britain enjoys this huge cultural and commercial benefit by virtue of the joint system of customary measures, which must therefore be abolished.' The EU's loathing and envy of that UK-USA historic bond is the prime motivation for compulsory metrication. It has nothing to do with weights and measures but is purely political.

Consequently, neither the UKMA Report (entitled 'A Very British Mess', although it is in fact 'A Very EUish Mess') which appeared last month, nor the Foreword by its political dinosaur of a Patron, is actually concerned, as they pretend, with the comparative merits of the metric and imperial systems, nor with the case for a metric monopoly as opposed to a free global market embracing both systems. Knowing that the people are even less enthusiastic about metrication than about the euro or the EU draft constitution, what they want is to skip all the argument, ignore public opinion, disregard the Labour Party's already congested programme for the next parliament, minimize the cost to the taxpayer which would exceed a billion pounds (but they ludicrously estimate as only a few millions), and present the nation with a comprehensive *fait accompli* – having summarily metricated practically everything and virtually extinguished our customary measures.

Why? Because, as I shall briefly explain and as Tony Bennett and Derek Norman discuss very fully in this splendid counter-blast of a Report, otherwise the current compulsory metrication programme will stall and eventually have to be scrapped. Without a metric guillotine (an appropriate metaphor, given the system's origins!) and severe penalties for non-compliance, customary measures will survive, reinvigorated after this long ordeal.

For compulsory metrication suffers two impediments, which must exasperate Lord Howe and his cohort. First, although the EU issues directives which member states must adopt, the ways and means for implementation are delegated to member states according to their various domestic legal codes. Second, in the case of the UK, central government in turn delegates enforcement to Trading Standards Officers who are employed

by local authorities, whose Council Members are as keen on re-election as are MPs.

The EU authorises the use of twenty different languages, at colossal cost and confusion, in a vain effort to resist the ever-growing use of English as the common European language, yet pretends that it cannot authorize even two systems of weights and measures. Compulsory metrication by destruction of our customary weights and measures is not merely vandalism, it is a form of *cultural cleansing*. The purpose is to accelerate integration of the UK within the EU by cutting us off from our roots and thereby undermining our natural affinity with the USA.

The metricsters would also agree with a statement to BWMA by the Department of Trade and Industry that traders who persist in using customary measures must be prosecuted because otherwise they enjoy an unfair competitive advantage against traders who have metricated. Since the original 'metric martyr', Steve Thoburn, reckoned that from his market stalls he must have personally served a million customers, of whom just two ordered in kilos, therefore – according to Lord Howe – those two were right while the other 999,998 were wrong. So compulsory metrication has nothing to do with democracy: it was never mentioned in any political party's general election manifesto or in any Queen's Speech introducing a parliamentary session's legislative programme, but simply imposed upon us at the EU's behest. Why not put the issue of compulsory metrication – as for the euro and the draft EU Constitution – to the people in a referendum? Because Tony Blair, Charles Kennedy and Lord Howe all know it would be overwhelmingly rejected.

Ever since the 1897 Act of Parliament, the use of metric units in Britain has been perfectly legal as an optional alternative to imperial, the two systems co-existing harmoniously with no difficulty or controversy whatsoever. Both were taught in primary schools, and either system was used in trade, according to convention or the dictates of customers and the marketplace. A century later, every organisation, every business, profession and industry that wanted to go metric had done so long ago. It follows that the only concerns affected by compulsory metrication are those that, for one good reason or another, do not wish to change over - including, of course, the mass of the populace.

The freedom of choice that had flourished for 102 years, as it still does in the USA, was something the EU cannot tolerate. Left to free competition, customary measures will always prevail. All the confusion, etc., of which Lord Howe now complains, results from enforcement of a metric monopoly. Four successive Prime Ministers – Wilson, Heath, Callaghan and Thatcher - had pledged that metric conversion would always remain a voluntary process, but what does their word mean to the EU or to Lord Howe?

The anti-democratic nature of the present regime was demonstrated when, after the High Court's devious rejection of Steve Thoburn's Appeal against his equally devious conviction of the criminal offence of selling a pound of



bananas, his lodgement of a further Appeal was refused by the House of Lords Appeals Committee. It was not - as often claimed by metricsters - that his Appeal to the House of Lords failed, for it was never heard! Permission for it to proceed was simply denied without any reason being given. Had a proper Appeal been conducted, he might well have succeeded. Likewise, it was not that his final Appeal to the Court of Human Rights in Strasbourg failed, but that it could not survive the vetting procedures - his petition was merely dismissed as incompetent. Again, the danger of the consequences if it had succeeded was too great to allow the case to proceed. No political institutions will help the people overcome this evil - they must help themselves, with valuable support from the media.

The Bible and Shakespeare are full of references to customary measures. Would Lord Howe abolish them? After all, the metric system was created by the Reign of Terror during the French Revolution, whose purpose was to destroy religion and cultural traditions. Those revolutionaries also tried to metricate the clock and the compass, but had to give up, because nothing in nature is decimal. The measurement of time (hence of latitude and longitude) as well as of music, are compatible with our customary system - for they all have a common cosmic origin - and incompatible with the metric system.

The metric system is littered with obsolescent units. What happened to the decametre and the decimetre, and how many MPs know the difference between them? Now the centimetre is dying too, to leave nothing between the metre and millimetre, neither of which is much use for everyday purposes. The reason why estate agents and surveyors, after half-heartedly embarking on metrication, have reverted to imperial measures is because (quite apart from public preference) calculations of floor-space to within the nearest whole square foot are accurate enough for practically every purpose, whereas to the nearest whole square metre are not nearly accurate enough, resorting to decimal places which look absurd and give rise to errors. Incidentally, how many MPs can define a kilonewton, a measurement of force which, per square metre, has replaced the universally understood pounds per square foot? That is only one instance among many.

The UKMA Report's nonsense about chaos caused by a dual system of measures is exposed by the fact that, not only does the present world superpower operate a dual system, but all four world superpowers of the future - China, India, Mexico and Brazil - happily trade in both metric and Anglo-American customary units. Moreover, the three economically most important industries, and the most innovative, in today's world - oil, aviation and computers - all use a mix of both systems! It is the Eurometricsters who are turning their backs on the future, retreating into a restrictive, doomed autocracy.

It is pitiable to see a man of Lord Howe's former stature reduced to advocating violation of the right to freedom of commercial speech - a right supposedly guaranteed by the European Convention on Human Rights. For the exercise of that right is the only permitted use of customary measures

remaining today, the right to display imperial units on labels and price tickets as 'supplementary indicators' - i.e. alongside but subordinate to the primary metric markings. Clearly, the function of such use is merely to provide accurate additional information for the consumer's benefit. Surely the right to do so is protected by freedom of commercial speech. But no! For it is not enough that all goods have to be weighed and priced exclusively in metric units. It must also become a criminal offence even to show the equivalent quantity or price in imperial measures. The customer must not be permitted any such clarification. This is repression for its own sake.

So this 'derogation' (concession) that still permits supplementary indicators must not be renewed again beyond the present expiry date of 31 December 2009. Once that right is rescinded, the abolition of customary weights and measures will be complete. Thereafter, it will be an offence even to mention imperial units in any commercial context. But because the public were not ready for that ultimate stage by 31 December 1999, when the derogation had previously been due to expire, it was extended for a further ten years, almost half of which has already passed. So the growing danger, UKMA and Lord Howe fear, is that if the public still aren't ready five years from now the derogation will have to be extended for yet another decade. The chance to eradicate the detested Anglo-American system will have been lost, and the credibility of the UK's commitment to metrication will be prejudiced, both in the EU and in the USA - to the anger of the former and delight of the latter!

Hence the desperate insistence that a crash programme of brutal metrication be embarked upon immediately, to minimize that risk by softening up the public within the next three to four years. That is the motive of this UKMA Report. The hope is that, the people having been bludgeoned and brainwashed by 2008, the extinction of supplementary indicators shortly thereafter will pass almost unnoticed.

They will be disappointed. For the government does not have the resources to spare for such a commitment. Besides, to win next year's general election requires a more Eurosceptic posture - and anyhow the dead-line of more than five years away will fall within the parliament after next, so why worry now? Furthermore, if the derogation has not been renewed in time, the regulations terminating it are bound to be challenged, with a good prospect of success, threatening the legitimacy of the whole process of compulsory metrication.

The difference between BWMA and UKMA is that we would always defend their right to use the metric system, for we believe in freedom of choice which must finally triumph.

*Vivian Linacre, December 2004*

# 1. Introduction

## Purpose of the Report

1.1 The report's main purpose is to make the case for retaining the use of customary weights and measures in Britain. It notes how customary measures are overwhelmingly used and preferred in day-to-day life, despite the forced introduction of metric units in many spheres over recent decades. We conclude with twelve recommendations. These chart a sensible way forward, which would allow British people to carry on using the measurement system they use and prefer. It also suggests how current confusion in some sectors, especially in the sale of packaged and loose goods, may be ended.

1.2 The occasion for our report is the recent publication of the report by the U.K. Metric Association (UKMA) which, in effect, called for a swath of new and highly repressive legislation to realise its dream to 'complete' the process of compulsory metrication. Its report was released on 8 July and Lord Howe, its patron, was interviewed several times that day on TV and radio to pro-mote its report. The effect of UKMA's proposals, if ever implemented, would be to obliterate virtually all use of British weights and measures.

1.3 Our report explains the extent of the strong and stubborn resistance of the British people to the attempt to impose an entirely alien system of weights and measures on them. It suggests that, in order to prevent further chaos, confusion and expense, the law should be sensibly amended so as to allow British people to revert naturally to their previous use of customary weights and measures, wherever practicable. Our report contains ample support for all the points and recommendations it makes.

1.4 The Customary Measures Society (CMS) is a membership organisation established this year to campaign actively to preserve our weights and measures system from attempts by powerful forces to get British people to abandon them. We rely on membership subscriptions and donations. Unlike UKMA, we do not receive large grants from scientific and industrial concerns, nor from any other source. Many of our members also belong to British Weights and Measures Association (BWMA), which has several hundred members and also campaigns to retain British weights and measures. There are also more activist groups like Active Resistance to Metrication (ARM). Many distinguished and respected figures in British society, like world-renowned astronomer Sir Patrick Moore, fully support the retention of British weights and measures, as is clear from BWMA's impressive list of patrons and honorary members (Appendix 1).

1.5 In our Report, we use the term 'customary' weights and measures', in preference to the terms 'British' or 'Imperial', also commonly used. Customary weights and measures are also sometimes known as the 'Foot-

Pound-Second' (FPS) system. The metric system is sometimes known as the S.I. System (Système Internationale) or Kilogram-Metre-Second (KMS) system.

## Principles for 'The Way Ahead'

1.6 In outlining our main proposals for reform, we do not advocate a compulsory return to the pre-1897 position, before both customary and metric weights and measures became lawful for use. Nor do we advocate wholesale reversal of the metrication programme to date. We merely set out what we believe is a sensible and realistic 'way ahead', based on the overarching principle of freedom of choice. We have had in mind these three key criteria:

(a) keeping the costs of any further changes to a minimum,

(b) respecting customer preference and usage, and

(c) enabling people to return to using customary measures, where this can be achieved without compulsion.

1.7 Our recommendations for the future of customary weights and measures are also supported by BWMA and ARM.

1.8 What prompted the UKMA to issue its report: "A Very British Mess"? UKMA supplies the answer in Paragraphs 1.3, 2.4 and 2.5 of its Report:

"The timing of [UKMA's] report arises from a recent publication by the Confederation of British Industry and the British Standards Institution together with the Department of Trade and Industry - the National Standardisation Strategic Framework (NSSF). This document...deals with the issue of standardisation in British industry and commerce. Yet, remarkably, it manages to discuss the many advantages to suppliers, producers and customers of having common and compatible standards without dealing with the central issue of measurement units...the NSSF excluded weights and measures [from their report because it] raised complex issues beyond the scope of this document...thus the NSSF, remarkably, appears to sideline completely the central point that harmonised standards, improved specifications and codes of practice cannot be fully achieved as long as much of UK industry, trade, government, education and media - not to mention the general public - think and work in a different measurement system from the official system".

1.9 On reading the UKMA report, it rapidly becomes clear that UKMA is deeply frustrated at the NSSF's eminently sensible decision to 'sideline' consideration of any further changes to our weights and measures. Indeed, the tone of the UKMA Report could be fairly described as 'desperate', as they see the prospect of achieving their passionate desire for the obliteration of British weights and measures receding rapidly.

1.10 UKMA stridently demands the complete elimination of British weights and measures before the end of 2009. To achieve that objective, for example, it calls for the complete replacement of Britain's million-plus road signs in customary measures, a proposal that we could cost well over £1 billion. UKMA's problem is that it insists that British people should think and work in a measurement system which is different from the one they normally use.

1.11 The Customary Measures Society, and other groups supporting the retention of British weights and measures, endorse NSSF's decision, discussed in Paragraphs 2.1 to 2.5 of UKMA's Report. NSSF regard further metrication as so unimportant and irrelevant to future British industrial and commercial interests as to merit no further consideration at this time. Indeed, given the fact that that weights and measures is very much part of the NSSF's remit, it is all the more remarkable that they recommend no further metrication.

1.12 UKMA's Report is, in many respects, highly misleading, indeed inaccurate. We deal more fully with some of these inaccuracies and misleading statements in Section 5 below.

## **2. Current use of customary and metric weights and measures**

### Day-to-day use of customary measures

2.1 The metric system is by now in common use for certain purposes. Usually this has been achieved by compulsion, not because people have voluntarily decided that the metric system is a better system.

2.2 Areas of life where metric is in common (but by no means exclusive) use include: science, engineering, the N.H.S., athletics, sales of petrol, Ordnance Survey maps and sales of many retail goods including food and 'shorts' in pubs. There are some other items commonly referred to in metric; examples include engine size (c.c.) and film size (such as 35mm) - though 35mm is in fact a metric conversion from a size measured in eighths of an inch.

2.3 However, as our cover picture illustrates, when one examines measurements in day-to-day use, and indeed in many other areas of life, it becomes crystal clear that use of customary measures remains very strong. British people use customary measures overwhelmingly, for example, when describing their personal weight and height, and in referring generally to distances, heights and dimensions. People placing advertisements in personal columns give heights exclusively in feet and inches. Critically, when the Police ask for public help in tracing criminals, they give out the height of suspects only in feet and inches. This overwhelming use of feet and inches persists despite the common practice in many primary schools of using height charts only in metric and almost exclusively metric teaching in both

primary and secondary schools. Some teachers teach only metric units despite the National Curriculum insisting that children should be taught customary measures alongside metric so as to 'understand' customary measures in everyday use.

## Roads and footpaths are signed in customary measures

2.4 Britain's roads and footpaths also illustrate the persistence of customary units. The Traffic Signs Regulations & General Directions 2002 (TSRGD) govern the content of signs on our highways. Even after 39 years of Britain's metrication programme, all dimensions and distances on British roads, cycleways and footpaths must be in customary measurements. There are good practical and economic reasons why this is so (see Section 6 below).

2.5 Supplementary use of metric is permitted as an option on road signs for three purposes only: height limits, weight limits, and the permitted maximum length of vehicles traversing level crossings. However, even here, use of metric by highways authorities has been very limited. Surveys by members of ARM suggest that despite dual units on some main roads, 95% of height limits are in customary units only. This figure rises to 99% for width limits.

2.6 The Department for Transport has accepted in writing on several occasions - rightly - that it would be impossible to introduce metric-only units on British roads without causing 'confusion', and thereby danger, to motorists. The Department acknowledges that roads are a 'safety-critical' environment where clarity and consistency of road signs are paramount. In passing, it's interesting that 'odd-man-out' Britain, driving on the left and using miles and yards, has one of the best road safety records in Europe.

British weights and measures remain the day-to-day language of the people, despite official attempts to stamp out their use, as these three recent newspaper cuttings confirm

[Daily Mail article 11 April 2001]

2.7 The fact that all road users are familiar with customary units is proved by the fact that driving licences are issued for people to drive on roads which are signed almost exclusively in customary units. The plain fact is that metric-educated 17-year-olds are perfectly familiar with customary units of distances and dimensions to be found on Britain's roads - miles, yards, feet and inches. This give the lie to those who falsely claim that 'metric-educated children don't understand Imperial measures'.

## Customary weights and measures - the language of the people

2.8 In analysing the persistence of customary measures despite 39 years of metric enforcement, we must focus on their day-to-day use by old and young people alike. When one listens to the everyday speech of British

people, one is struck by the overwhelming use of customary measures for almost all purposes. UKMA reluctantly acknowledges: "Much teaching of metric to school-children is wasted since they have no opportunity to practise their skills outside school...in everyday conversation, many British people freely use feet, stones, acres and miles per gallon" (UKMA Report, Paragraphs 3.3(l) and 3.5(g)). The reason is that children grow up hearing and using customary units in everyday life - in their families, and among their friends.

2.9 A significant illustration of this came in a 5-minute BBC film "Mission Impossible", made with the help of the authors of this report, on the campaign to retain customary measurements. The film team came across a group of four boys, aged around 10, fishing on the banks of the River Lee. These metric-educated boys were, in turn, asked four questions: how tall was the first, how much did the second weigh, how heavy was the biggest fish the third had ever caught, how deep did the fourth think the river was? In each case, the answer came in customary units - and in each case, the boys did not know the metric equivalent. One boy was asked: "Surely you learn metric at school?" His answer came: "Yes, but we don't understand it".

2.10 Customary measures are used overwhelmingly on T.V. and radio, in newspapers and magazines, and books. The most popular children's books in the past decade have been the Harry Potter books. There are frequent references to weight and measures in the Harry Potter books and they are exclusively in customary units. The books' author, J.K. Rowling, is an honorary member of BWMA. TV fitness programmes invariably refer to weight in stones and pounds and height in feet and inches.

## Customary measures and property selling

2.11 Another clear indicator of the persistence of customary measurements in popular culture comes in relation to property. In the following cases, customary measures are used either exclusively or overwhelmingly:

- (1) the sale of office space - square feet
- (2) descriptions of the size of land for sale - acres
- (3) description of the size of land in country parks, stately homes etc. - acres
- (4) the dimensions of rooms in houses for sale - feet
- (5) the length of gardens in houses for sale - feet
- (6) the renting of allotment gardens - rods.

2.12 The gradual drift back to use of customary units of measurement was nowhere better illustrated than in a recent report in Estates Gazette, 15 May 2004, referring to a decision by upmarket estate agents Knight Frank to

drop measurements in square metres altogether from its research reports. The *Estates Gazette* editor wrote:

“In property at least, the square metre is going the way of the rod, pole or perch - medieval measurements of length (about five and a half yards) that older readers will remember from school exercise books. People simply do not talk in square metres. They talk in feet. Agents do it. Occupiers do it and educated investment managers do so. So let’s talk - and write - in feet”.

2.13 Prior to November 2002, *Estates Gazette* gave metres as the prime measurement unit for floor area. Then they began to lead in square feet (with metric added in brackets afterwards). From April this year, the magazine dropped the square metres in brackets and now only use square feet. Yet UKMA, in its Report, advocates compulsory use of square metres!

2.14 In Paragraph 7.25 of its report, UKMA makes this claim: “Within the commercial property business, there is now increasing usage of metric units, and notices will sometimes be advertised in square metres...” That flatly contradicts the report in *Estates Gazette*. We do not believe the UKMA can justify its statement. The overwhelming majority of office space is advertised only in square feet. Occasionally, supplementary indications in square metres are found. Signs just in square metres are very rare.

## Customary measures in sport and retail sales

2.15 Most athletics events, including the Olympics, are in metric, though the weight of the shot remains at 16 lbs. and boxing weights remain in stones and pounds. Rugby pitches may be laid out in metres, but apart from those examples, there is overwhelming use of customary units in the nation’s most popular sports. Switch on or tune in to a football match, golf or tennis tournament, horse racing or a cricket match (with its 22-yard pitch and 4-foot high stumps), and you will almost never hear a metric unit used. Footballers shoot from so many yards, holes on a golf course are measured in yards, and commentators use feet for the length of putts. Horse racing courses remain measured in furlongs. When the charity Sport Relief held an international fund-raising event just two days after Lord Howe’s appearance on TV to advocate metric compulsion, the event was run over one mile.

2.16 Customary measures are used overwhelmingly in commerce where metric has not been imposed. Some common examples are as follows:  
( \* indicates that this is conceded by UKMA in Paragraph 2.6 of its Report)

- (1) the size of T.V. screens in inches
- (2) the sale of ‘quarterpounders’ and ‘halfpounders’ in burger restaurants
- (3) the size of pizzas in inches
- (4) the weight of steaks in restaurants in ounces



- (5) the sale of potatoes and other vegetables by farmers in pounds
- (6) the size of photos\* and picture frames in inches
- (7) horsepower for engines\*
- (8) British Thermal Units per hour for central heating boilers\*
- (9) clothing sizes in inches\*
- (10) cubic feet for the capacity of 'white' goods like fridges and freezers\*
- (11) tape measures which lead in feet and inches\*
- (12) the use of miles per gallon to advertise the fuel consumption of cars\*
- (13) use of 72 points to the inch for type sizes on computers.

Fuel and milk tankers unload in gallons per minute, bullets are fired in feet per second, fish are weighed in pounds, guns are proofed in tons per square inch. In all these and many others cases, UKMA wants Parliament to introduce legislation with criminal penalties to ban the use of customary units.

## Customary measures in marketing

2.17 It is also of more than passing interest to note that some companies deliberately use customary units to market their products. Examples include a cider company that produces a 'full pint' can of cider (even though the usual can sizes are 330ml and 440ml these days), a chocolate company producing a 'yard of chocolate' and the 'Half-Pounder' sweet company which retails 'half-pounder' and 6 oz. bags of sweets.

2.18 Even more striking, it is notable that leading advertisers frequently use customary measures - and never use metric - in major advertisements which are published in national newspapers and magazines. Here is a selection of examples, just from the past 12 months:

'Could you face 30-foot waves?' - advert for donations to the R.N.L.I.

'Jack Daniels Whisky: filtered through 10 feet of maple charcoal' - Jack Daniels adverts

'Avoid the 50-yard dash' - mobile 'phone advert

'634 feet of stretch limo' - advert for new Virgin Trains express trains

'Relief from congestion is just 12 feet wide' - headline for national advert for a campaign for extra lanes on motorways to relieve traffic congestion.

2.19 Again, it is noteworthy that UKMA also wants to see an Act of Parliament passed that would even ban any reference to customary units from advertising! (Report, Paragraph 7.13), another indication that UKMA's position may fairly be described as 'extreme'. Such a law would probably not pass the 'Human Rights Act' test, now applicable to all U.K. legislation, since it appears to be incompatible with the European Convention right to 'freedom of information', which surely includes 'freedom of commercial speech'.

## Government use of customary measures

2.20 Even government departments frequently use customary units, as the UKMA laments in its report. In Paragraph 7.3, they castigate the Department for Health urging us to eat 'a 2-inch piece of cucumber', a County Council for announcing 'three inches of compacted snow' and '4-foot snow drifts', and even the highly metric Meteorological Office for referring to 'rainfall which persisted for over two days and amounted to over 50 inches' [this was in a monsoon area, so the metric equivalent of '1,270 millimetres' or '1.27 metres' of rain might have sounded very strange to British ears). Even government departments, then, realise that to communicate effectively with British people they need to use customary units. There are of course myriads of other examples.

2.21 The supreme examples were the decisions of both Prime Minister Tony Blair and Chancellor of the Exchequer Gordon Brown to announce the weights of their three respective babies only in pounds and ounces.

## The 'problem' of the pint

2.22 Of course, the 'pint' remains the measure of beer, lager, cider and other 'long' drinks sold in pubs. There is fierce opposition to any proposal to replace the pint with measures in litres. Strange as it seems, given its determination to eliminate customary measures, UKMA (Paragraph 7.9(d)) states that abolishing the pint is 'not an immediate priority'. They add with unusual hesitation: "Whether pints should eventually be phased out completely is a further option for consideration". It is well known that the government has been too scared to touch the pint for fear of adverse customer reaction.

2.23 As far as we can see, there is no weaker case for abolishing the pint than for abolishing, for argument's sake, the inch in clothing, the mile on roads, or the square foot in office space. It appears that UKMA was unwilling to recommend the abolition of the pint for fear of adverse public reaction. This raises questions about the integrity of UKMA and its Patron, Lord Howe, who once said it was 'shameful' that Britain still uses the pint. Whilst talking pints, we note that the law requires publicans to display a notice giving the quantities of 'shorts' in millilitres, but doesn't insist on them displaying - as they used to - signs stating the equally important requirement that beers must be sold only by the pint, half-pint or third of a pint. We recommend that this useful 'social reminder' of beer measures be reintroduced.

2.24 Even where metric has been imposed, the persistence of customary measures is clear. Walk round any street market, and the price of fish, meat, cheese and vegetables is predominantly in pounds, not kilos. Many loose goods in supermarkets are clearly signed just in pounds with only tiny shelf-edge labels giving the metric equivalent. Despite years of metric compulsion in the sale of carpets, many carpet retailers advertise the price per square yard and, even when they dual-price, they lead in customary units. Prices are shown, for example, at £5.99 per sq. yd, £8.99 per sq. yd., etc. If the metric equivalent is added, it is often just as a supplementary indicator. Off-cuts of carpet are always in feet and inches: 9' 6" x 6' 0"; 15' 3" x 7' 9" etc.

### Admissions made by UKMA

2.25 Finally, UKMA (Report, Paragraphs 3.3 and 3.5), makes a total of 15 admissions about the widespread use of customary weights and measures today:

- (a) "Distance signs and speed limits are exclusively in miles, yards and miles per hour"
- (b) "Feet and inches predominate in height and width restrictions"
- (c) "Advertised petrol consumption is frequently given in miles per gallon"
- (d) "Much of the non-specialist media give primarily imperial units"
- (e) "Outside of the maths or science lessons, many schoolteachers continue to use imperial units"
- (f) "Football commentaries"
- (g) "Estate agents give floorspace in square feet"
- (h) "Estate agents give room and garden dimensions in feet and inches"
- (i) "Many market traders and some small shopkeepers display weights in pounds and ounces"
- (j) "Many supermarkets advertise exclusively in imperial"
- (k) "Holiday brochures often give summer temperatures in degrees Fahrenheit"
- (l) "Description of criminals wanted by the Police are given by the media exclusively in Imperial units"
- (m) "Medical professionals feel obliged to convert to imperial when communicating with patients...parents are told the weight of a new-born baby in pounds and ounces"

(n) "In everyday conversation, many British people freely use feet, stones, acres and miles per gallon"

(o) "Much teaching of metric to schoolchildren is wasted since they have little opportunity to practise their skills outside school".

### A Concession by the UKMA

"Much of the adult population, both young and old, has no ability to think or work in metric units" - Paragraph 4.15, UKMA Report

## **3. Consumer preference for customary weights and measures**

### Opinion Polls

3.1 Over the past decade, many independent surveys have been carried out to establish consumer preference about the use of customary or metric measurements. Some of these focus primarily on current usage, others focus on preference. The main reference for these surveys is the report *The Weight of Public Opinion: Imperial or Metric? - Research Findings 1997-2001*, written by Warwick Cairns for BWMA.

3.2 In summary, the results show consumer preference for the continued use of customary measures running at 70% to 90%. Another key feature of the surveys is that support for customary units is almost as strong amongst the younger generation as for older people, despite decades of metric education. This gives the lie to those who claim that young people prefer metric.

3.3 Telephone polls are a less sure guide to public opinion; nevertheless it was noteworthy that a telepoll by 2,340 people carried out by ITV Teletext, during the very week UKMA's Report was published, showed 93% support for keeping customary units with just 7% favouring compulsory metrication.

3.4 It is notable that the UKMA Report makes only passing references to the very strong and consistent expressions of public support for retaining British weights and measures. Its main reference, in Paragraph 5.13, borders on the libellous. They refer in derogatory terms to independent surveys on weights and measures carried out by some of the best-known opinion poll companies in Britain. UKMA says: "Although a number of surveys have investigated public opinion on the metric changeover, these have been largely commissioned by organisations who are trying to obstruct further progress. The results of such biased surveys must therefore be treated with caution".

3.5 Anyone who examines the actual questions asked in all the surveys referred to in 'The Weight of Public Opinion', or indeed in other similar surveys we mention in our report, would inevitably agree that the questions have been scrupulously fair. They were designed to be fair. Moreover, the opinion research companies who carried out the polls, in order to preserve their respective reputations, advise clients on whether a question is 'unfair' and would not knowingly ask a biased or 'unfair' question. The UKMA statement that surveys carried out by such reputable organisations as ICM and BRMB were 'biased' should be publicly withdrawn at the earliest opportunity. One might well ask why UKMA has not taken the opportunity to conduct its own survey on the popularity of customary weights and measures?

3.6 Most of the surveys referred to below used questions based on advice by Warwick Cairns himself. Mr Cairns is a professional market research analyst and a Director of one of Britain's leading advertising agencies.

3.7 The report The Weight of Public Opinion may be referred for detailed evidence of overwhelming public support for units. Below are some key findings. We distinguish between surveys that deal with use and those that deal with preference. The main results are from six surveys from November 1997 to June 2001, covering 6,030 respondents aged 18 or over. We have added findings from three more recent surveys of public opinion since then:

### British Weights and Measures: Public Opinion

#### USE

Q. Which kinds of measurement do you generally find most convenient for everyday purposes? (RSL, Nov 1997): **Customary: 74%**

Q. Do you tend to think in kilos and grams or in pounds and ounces? (ICM, 1998): **Pounds and Ounces: 74%**

Q. Do you count in miles or kilometres? (Bella Magazine, 2002): **Miles: Over 80%**

#### PREFERENCE

Q. Would you support shopkeepers who continue to sell goods in pounds and ounces in defiance of the law or not? (BRMB, 2000): **Yes: 75%**

Q. Do you agree with the new Euro law enforcing metric weights (7,229 responses)? (Teletext Poll, 2000): **No: 97%**

Q. Thinking about TV and radio weather forecasts, which of the following kinds of description do you prefer? (ICM,2001) **74% - Inches of rain; Yards of visibility in fog; Miles-per-hour winds**

Q. Do you support compulsory metrication? (BRMB and ICM, 2000 and 2001): Year 2000: 16% - **Year 2001: 10%**

Q. Should the choice of what units to use be left to shopkeepers and their customers? (ICM, May 2001): **Yes: Over 70%**

Q. Would you prefer miles and yards or kilometres and metres on British road and footpath signs? [ICM, April 2002): **Miles: 86%** - Kilometres: 8%

3.8 The ICM Survey of over 1,000 people carried out from 26 to 28 April 2002 is of particular significance. It is recent and dealt with one of the key recommendations of the UKMA report - the proposed metrication of British road and footpath signs. They found that 86% of respondents wished us to retain miles, yards, feet and inches, against a mere 8% who wanted kilometres; a majority of nearly 11 to 1 (6% not expressing a preference). In this survey, one striking finding was that the figures were identical for 18 to 24-year-olds, showing that enthusiasm for customary measures is just as strong among younger people.

3.9 UKMA does not believe that public opinion should be taken into account at all in deciding the future of British weights and measures. This is an undemocratic, some would say totalitarian, indeed extreme. This dismissal of public opinion alone should lead us to reject their recommendations.

## **4. Problems arising from criminalising customary weights and measures**

### The 'Metric Martyrs'

4.1 One of the most controversial subjects in recent years in Britain was the decision of the government, in mid-1999, to criminalise the sale of loose goods in pounds and ounces, with effect from 1 January 2000. This was done by giving effect to the 1994 Weights and Measures (Units of Measurement) Regulations, passed by Parliament in response to European Union Directive EC/80/181. The debate on that Regulation took a mere 20 minutes and was characterised by levity. The Conservatives introduced this Regulation and Labour later decided from which date it should come into effect.

4.2 Making it a crime to sell loose goods by the pound was therefore done to comply with an E.U. Directive. This required the eventual implementation of the metrication of the sale of both packaged food and loose items. It must be emphasised that, so far as we know, the European authorities were not exerting any pressure to implement this Directive. The decision to implement this draconian and burdensome Regulation was made by British Ministers of the two main political parties.

4.3 There was determined resistance by tens of thousands of small traders to the attempt to use the criminal law to force them to trade in metric units, which almost none of their customers used. The successful prosecution of the late Steve Thoburn cost him, Sunderland Council and the government (who part-funded the prosecution) hundreds of thousands of pounds. Steve Thoburn's huge losses were paid by thousands of donations from the public.

4.4 The case led to a contorted set of judgments in the Magistrates and High Courts. In the end, Lord Justice Laws, in the High Court, invent an entirely novel doctrine of a 'hierarchy of statutes' to defeat the argument of Mr Thoburn's legal team that the earlier 1985 Weights and Measures Act (primary legislation), which expressly permitted both customary and metric units for trade, took precedence over the later, 1994, Regulations (secondary legislation). Thoburn's lawyers said that the 1994 Units of Measurement Regulations were ultra vires (illegal) because they purported to contradict the 1985 Act. Laws claimed that 'Constitutional Treaties', like the European Communities Act 1972, which took us into the then Common Market, allegedly take precedence over other statutes, to defeat the previously clear legal principle of 'implied repeal'. This novel doctrine got the government off the hook. But Laws, in hastily inventing the doctrine of a 'hierarchy of statutes', may have neglected to consider sufficiently the significance of 'constitutional' Acts like Magna Carta and the 1688-9 Declaration and Bill of Rights. There is a strong argument for suggesting that, under these, the European Communities Act 1972 itself (under which the 1994 Regulations were passed), was - and is - unconstitutional, and hence illegal.

4.5 Thus taxpayers were forced to pay for enforcing a deeply unpopular law. There were other high-profile prosecutions of two traders in Cornwall and one in Hackney for continuing to use scales in customary units, whilst a Sutton trader was threatened with withdrawal of his street trading licence if he continued to meet the preference of 100% of his customers for buying his fruit and vegetables in pounds. This threatened his very livelihood.

4.6 It is unprecedented, so far as we are aware, for a British government to criminalise its own people for an action which the overwhelming majority of its people feel should not be a crime. Elsewhere in our justice system, there is agreement that certain actions should be crimes - murder, violence, drug-dealing, robbery, theft, dishonest gain and so on. Fining people for selling a pound of bananas - to someone who asks for a pound of bananas - is rightly regarded by most British people as deeply wrong, indeed offensive.

4.7 The decision of Lord Justice Laws was almost immediately referred to the European Commission on Human Rights, backed by human rights group Liberty, because Steve Thoburn's conviction appeared to breach of Article 10 of the Human Rights Convention. This guarantees the 'right to freedom of expression'. The case was taken by Mr Neil Herron of the 'Metric Martyrs Defence Association'. It was in March this year that the Commission gave a terse judgment claiming that the matter was 'not within the Commission's jurisdiction'. One result of the reference to the Human Rights Commission

was that the nation's Trading Standards Officers decided to await the Commission's verdict before continuing their programme of enforcement.

## Voices for and against a 'crackdown' on lbs. and oz. traders

4.8 No sooner was the outcome of the case known than the Labour-controlled Local Government Association issued its Public Protection Bulletin (March 2004) to its member authorities, calling for an immediate 'crackdown' and resumption of prosecutions of all the remaining traders still using weighing scales only in customary units, or still lead-pricing in pounds and ounces, or both. The language they used was unusually insistent, given that selling to British customers in their customary units harms no-one. Similarly, UKMA use emphatic language in their Report to declare that: "There is no longer any excuse for local authorities and traders to defer enforcement or compliance action" (Paragraph 7.9).

4.9 However, on the very day on which the UKMA and Lord Howe were calling for compulsory metrication to be accelerated and rigorously enforced, a much more sensible speech was being made by the new Conservative Group Leader of the Local Government Association, Councillor Peter Chalke. He was responding to the March Public Protection Bulletin (see Section 4.8).

4.10 Councillor Chalke said: "Trading Standards Officers need to concentrate efforts into the areas that most effectively protect and advise the public. I personally do not think that the prosecution of traders who continue to use Imperial measures can ever be one of those priorities. We have all read in the newspapers recently the cases brought against traders. These cases, although technically enforcing the law, hardly have public support and often harm the credibility of local government. Local government is facing budgetary pressures from all directions and it seems somewhat absurd that public money has to be used to bring these sorts of cases. Local authorities have to obey the law, but you really have to question whether this law is just another example of the stupid and irrelevant regulations coming out of the European Union at present". We endorse Councillor Chalke's views.

4.11 There may well be a change in the LGA's policy on weights and measures. There was a poor result for Labour in the local government elections held on 10 June this year. In their worst electoral performance in local government since 1912, Labour finished third in terms of votes cast, behind both the Conservatives and the Liberal Democrats. They lost hundreds of Council seats and control of several authorities. Conservatives might well control the LGA in the near future and their influence is growing. In general, it appears that Conservative Councillors oppose the oppressive enforcement of the 1994 Measurement Regulations. If traders continue to be prosecuted for selling in pounds in the run-up to a General Election, the issue could become controversial. We refer to some recent Conservative Party statements on compulsory metrication in Section 9 of our report.



4.12 There is also opposition in the Liberal Democrat Party to the prosecution of traders for selling in pounds and ounces. In 1999, the then Leader of the Liberal Democrats, Lord Ashdown, denounced the move to prosecute traders selling loose goods in customary measures. In a recent letter (24 June 2004) to a constituent, Robin Willow, the newly-elected Liberal Democrat M.P. for Brent East, Sarah Teather, wrote: "...it does seem to me to be illiberal to criminalise people who sell in measures that their customers want. I believe, as a liberal, that we should let the market decide which measure survives, and that we should certainly not seek to put essentially law-abiding people in prison for transgressing this rule [selling in pounds and ounces]".

4.13 On the assumption that most Trading Standards Officers will agree that there are far more important priorities than trying to enforce unpopular and unnecessary Regulations, it is likely that traders still selling mainly in pounds and ounces will be able to carry on doing so for years without fear of prosecution. At the time of issuing our report, the only current case we know of is the action by Cornwall Trading Standards against two traders - John Dove, a fishmonger, and Julian Harman, who runs general stores and greengrocery. They were successfully prosecuted in 2001 for selling in pounds, each receiving a conditional discharge. In July this year, a Senior Trading Standards Officer sent them each a letter threatening a further prosecution. They say that all their customers prefer to buy in pounds and ounces and maintain that they will continue to sell in customary measures.

How can we decriminalise selling in pound and ounces? The 'way ahead'

4.14 We now need to consider what should be done about the 1994 Units of Measurement Regulations which (a) ban the use of weighing machines in customary units and (b) outlaw lead-pricing in pounds and ounces.

4.15 We believe we should return to the position before the implementation of the Regulations on 1 January 2000. The next government should immediately issue strong advice to local authorities that there should be no more prosecutions of traders weighing and pricing in pounds and ounces. Next, the 1994 Regulations should be repealed, as the Conservative Party is now demanding (see Section 9 below). This may be done without contravening European Directive EC/80/181, which merely requires the eventual implementation of the Directive. The government could simply inform the Euro-pean Commission that it planned to repeal the 1994 Units of Measurement Regulations but would agree to implement the Directive at some future date. For the sake of argument, it could decide to implement the Directive in, say, 1,000,000,000 A.D., or even further ahead. Another device would be to tell the European Union that we will comply with EC/80/181 'in the next Parlia-ment'. Since no Parliament can bind its successor, the next Parliament could also decide to comply 'in the next Parliament'. And so on. The government would be within their legal rights under E.U. law and no European institution could do anything about it.

4.16 At the same time, dual labelling of packaged goods, showing their weight in both customary and metric measures, should be introduced without delay. This is now the situation in the United States. Its likely effect would be that producers would gradually revert to using key familiar quantities in customary units - pounds, 12oz., 8oz., 4oz., 2oz. and so on, depending on the product. This would achieve a major improvement for consumers. They would understand much better the value of what they buy. Introducing weights in grams has led to a departure from standard sizes. To accompany this measure, dual 'switchable' weighing machines, which have not been certifiable since January 2000, should be reintroduced.

4.17 Finally in this section, we call for a Royal Pardon to be granted to the late Steve Thoburn and all other traders who currently have criminal records for selling produce by the pound. The next government should recommend this course of action to Her Majesty the Queen.

### Ending the 'Downsizing Deception'

4.18 The shopper now faces a bewildering array of product sizes in metric on supermarket shelves. Almost any product weight can be found and this makes it difficult to compare product size and product value. In a recent survey by a member of ARM in a Somerfield supermarket in Essex, no fewer than 40 different metric weights were found within the space of 10 minutes on a range of tins, jars and packets (see Appendix 2).

4.19 Manufacturers can choose whatever quantity of grams they like for their products. The unfortunate result is significant consumer misunderstanding. A weight like '411g' or '283g' does not readily convey information in a comprehensible form. Besides that, an ounce is much easier to visualise than the tiny gram. A gradual return to the use of customary units would bring much-needed clarity about product weight to the consumer.

4.20 Supporters of metric pricing say that the requirement to give the price per 100 grams on shelf edge labels helps customers to know the value of products. However, labels may give the price either per 100 grams, or per kilogram, a source of confusion. Worse, the lettering is tiny - difficult to read and absorb as one tours the shelves; indeed one survey in the 1990s found that 90% of consumers did not even refer to shelf edge pricing. Product value was much easier to absorb in the days when customary measures were used. Then, the sizes of jars, tins and packets tended to be standard and so easily recognisable.

4.21 A related serious consequence of compulsory metrication in the sale of packaged goods like tins, jars and packets of food has been the phenomenon of deliberate 'metric downsizing'. They are gradually being reduced in size but the price stays the same. A notable recent example was the reduction in the size of packets of Fox's Glacier Mints from half a pound (equivalent metric weight 227 grams) to 200 grams, with no price

reduction. This raised the unit price at a stroke by 13½%. This has been described by some as 'exploitation' or even 'cheating'. UKMA recognises that manufacturers 'down-size by small amounts to disguise price increases', but the best they can come up with to deal with this problem is the complex concept of 'exclusion zones around the established package quantity'. UKMA's suggestion would probably require more - and very complex - legislation.

4.22 Many more cases like Fox's Glacier Mints could be given. For example, under customary measures, before the start of metrication, crisp packets were nearly always sold in 2 oz. bags (equivalent to 57 grams). This point was dealt with admirably in BWMA's 2002 pamphlet *The Great Gram Scam*. Now crisp packets have significantly reduced in weight. Many different weights are found: 40, 35, 30, even as low as 28 grams. Undoubtedly this has enabled crisp manufacturers to get away with deceiving the consumer. Metric downsizing has reduced crisp packet weights to well below 2 oz.

4.23 A common complaint is that manufacturers downsize from the pound weight (454 grams). Initially, they reduce to 450 grams, then perhaps to 430 grams, then to 420 or 400 grams and so on. The customer who used to know that a jar of something (like jam) weighed precisely one pound does not readily notice the subtle weight and size reductions of the jars or tins she buys. It is relatively easy to compare, say, a 1 lb. jar to a 12 oz. jar. But it's much harder for the consumer to compare jars of the same product weighing, say, 454, 425, 400 and 375 grams (to give a typical example).

4.24 Despite that trend, there is evidence that traditional weights are being maintained in many product ranges. One pound is 454 grams. Despite two decades of compulsory metrication of packaged goods, it is fascinating to see how many items - like jars of honey and jam - continue to be sold in 454-gram jars. What a farcical situation we will be in when customers buying these jars in future may be banned from being explicitly informed that they weigh exactly a pound! It would appear to be a manifest breach of the European Convention's much-trumpeted 'right to freedom of information'.

4.25 Observations suggest that many shopkeepers and market traders still lead-price in pounds. Many supermarkets, notably Tesco, lead-price in pounds for their fruit, vegetables and other loose items. Customers often ask for goods in pounds and ounces even if priced only in kilos. These observations are matched by the surveys in *The Weight of Public Opinion*. Undoubtedly some people are getting used to metric units and a few prefer them. There is indeed confusion. Many shops like butchers and fishmongers have complicated dual-priced labels which are difficult to read and absorb.

4.26 The United States has dual marking of packaged goods, though most U.S. consumers only read the weight in customary units. Dual indications should be restored without delay to packaged goods. If the retail trade were given sufficient notice, the extra cost would be minimal. Such a move would probably lead to a swift re-ordering of product sizes to convenient units of

whole pounds or ounces, enabling consumers to make easier price comparisons. To refer again to crisps, any manufacturer putting a full 2 oz. of crisps in his packets would undoubtedly steal a march on his rivals.

## The UKMA's demand for yet more crimes on the Statute Book

4.27 One striking feature of the UKMA Report is the extent to which they advocate punitive measures. A particularly unpleasant example comes in Paragraph 7.5, where they recommend that the government force all agencies, contractors and 'local authorities, universities and charities to whom they make grants or loans' to 'work exclusively in metric'. One can just imagine government officials poring over a charity's documents to see if a customary weight or measure has been used - maybe the sale of a 42-inch jacket in a charity shop. Perhaps UKMA would wish to see grants or loans denied to charities 'caught out' using the 'wrong' unit of measurement?

4.28 Another repressive UKMA proposal is 'to require property advertisements to give exclusively metric dimensions and areas'. Thus every hotel would be required by criminal penalties to describe their grounds as, for example, '4.8 hectares' instead of '12 acres'. House buyers would be told that a house for sale has a '27-metre' garden, not one of '90 feet'. A couple seeking a large lounge would be told the length of one was '4.85 metres' instead of '16 feet'. All this despite UKMA freely acknowledging more than once in their report that nearly all British consumers use and prefer customary units for property and are perfectly comfortable with them. Again, the repressive mindset of the authors of the UKMA report is revealed.

4.29 UKMA also wishes the law to be used to force the Meteorological Office and all publicly-funded bodies to give all weather reports and forecasts in metric, including wind speeds in kilometres per hour, 'within a year'. Presumably they wish, then, to abandon the internationally-agreed Beaufort Scale, in which wind speeds are described as 'Force 1', 'Force 2' etc. up to 'Force 12'. If so, it would appear that UKMA has a 'metric obsession'. Forcing the Meteorological Office and the BBC to use kilometres per hour instead of the Beaufort Scale could breach international shipping rules and place all those who rely on the BBC Shipping Forecast at risk.

4.30 The criminalisation of the use of customary weights and measures has given both compulsory metrication and 'Europe' a bad name in Britain. More of the same would be opposed at least by the Conservative Party and United Kingdom Independence Party and would meet with strong opposition in the country. It would serve no purpose except to realise UKMA's dreams. The main lesson to be drawn from the 107 years since metric weights and measures were first legalised in Britain is that they are far less 'user-friendly', hence the obvious fact that they never really 'caught on' here.

## **5. A response to the main points of the UKMA report**

5.1 UKMA's 64-page report is lengthy and repetitive. Much of its content and its recommendations are rebutted within the main body of our report. Moreover, there are a considerable number of specific incorrect assertions and comments that UKMA makes which we now deal with.

Which system is superior - metric or customary weights and measures?

5.2 UKMA makes the claim that the metric system is 'superior' because its units are 'divisible by 10' and add that it is a 'rational, logical system'. In their Executive Summary they claim: "Metric units constitute a proper coherent system in which all units are interrelated and easy to calculate...the metric system is inherently superior because it is decimal and consistent". They add (Paragraph 4.18): "The great advantage of metric units is that they constitute a coherent, consistent, integrated system, rather than an incoherent collection of inconsistently related units".

5.3 These statements are controversial. For example, an inch is just as 'divisible by 10' as the metre or the litre. A fair assessment of the two rival systems has been made recently by John Strange, who has written the following passage for the forthcoming new edition of Vivian Linacre's compendium *A Guide to Customary Weights and Measures*.

"The metric system is logical, dogmatic and coherent. These characteristics make it suitable for most scientific work, particularly physics. The British system is practical, flexible and contains a choice of coherent subsystems. These characteristics make it suitable for much scientific work and for virtually all everyday applications".

5.4 UKMA reluctantly concedes there are difficulties with the metric system in Paragraphs 6.18 to 6.21 of their Report. They admit that due to what they say was the unwise decision of the government in 1969 to omit the centimetre and centilitre from official use, the metric system in Britain "uses un-necessarily large numbers and is 'not user-friendly'". They add: "One of the consequences of separating the metric conversion of industry from a wider programme involving the general public was that insufficient consideration was given to making the new system customer-friendly...metrication acquired a reputation for being scientific, over-precise and generally difficult". Hardly 'simple and easy to use', then, as UKMA claims later on.

5.5 We might also note that many of the units alleged to be metric are not metric and are better described as 'compound'. Indeed, the E.U. Directive (80/181) specifying what units are to be used in future admits that some units are 'compound'. Kilometres per hour is a compound unit; truly 'metric' units would be metres or kilometres per second. 'Kilowatt-hours' are com-

pound. Calories, required on most food products to give the energetic value of food, are not metric and not even permitted by the E.U. Directive.

5.6 There is not enough space in this report to discuss in detail the relative merits of customary and metric systems of weights and measures. We confine ourselves simply to making seven brief points.

5.7 First, metric units have been allowed to be used in the United Kingdom for most purposes, including for trade, since the Weights and Measures (Metric System) Act 1897. As UKMA acknowledges on page 52 of its Report, this Act provided that "metric units may be used for all purposes, but did not make them compulsory". The history of weights and measures since then is that there was no significant demand for the adoption of the metric system, either by industry, trade, or ordinary people. Only when the British government announced its proposals to switch to metric in 1965 did usage of metric units increase - and that was by the use of compulsion.

5.8 Second, we concede that the metric system is now in common use in science, industry and engineering. However, it remains a matter for debate as to whether this is because there is some inherent advantage in using metric in such applications, or it has merely become the norm in these fields. We emphasise again that we do not seek to reverse the changes made in those sectors; for example, we do not wish to interfere with what have become standard industry measurements.

5.9 Third, we point out that customary measures are highly practical in that they are based on man's own physical characteristics and ability to do work. Many observers have commented that they form a 'human' or 'natural' system of measures which has evolved to meet mankind's everyday needs.

5.10 Fourth, whilst metric advocates stress the benefit of the units in their favoured system being divisible by 10, thus making life 'easier', the British system of weights and measures is considered by many to be superior because its units are commonly divisible by 2, 3, 4, 5 and 6. The non-metric 60-minute hour and 60-second minute have been retained internationally because these are divisible by 2, 3, 4, 5, 6, 10, 12, 15, 20 and 30 - better than the metric 100 which is only divisible by 2, 4, 5, 10, 20, 25 and 50.

5.11 A remarkable example of the superiority of the duodecimal system over the decimal system comes from Holland, where timber merchants and carpenters now work using 120-centimetre lengths of wood. Staying with timber, the impracticality of the centimetre (too small) and the metre (too big) has led some timber merchants in Britain to measure wood with the 'bernicle', which measures one-third of a metre and is divided into 11 units. It helps staff to measure the area or cubic capacity of wood. It looks remarkably similar to a foot-long ruler divided into inches!

5.12 We might also point out that in the days of both pounds and ounces and pence (and before computers), market traders appeared to have no difficulty in swiftly reckoning up the correct price of various quantities of fruit, vegetables, fish, meat or cheese.

5.13 Fifth, even metric advocates concede that serious mistakes may occur because the decimal point has been put in the wrong place, or a 'nought' has been added or omitted, or even because of confusing similar-sounding words like 'millimetre' and 'centimetre'. There are many examples in the medical field where a patient has been misprescribed medicine because of these types of error and deaths have resulted. One sad case was reported in The Times, 11 October 2000. A new-born baby died in a hospital intensive care unit after a member of staff had entered a decimal point in the wrong place.

5.14 Sixth, the system of customary weights and measures rolls up one unit into another at the point when the numbers begin to get large and unwieldy: pints into gallons, pounds into stones and so on. The human brain finds it more difficult to cope with larger numbers. Figures of hundreds of grams on a packet or tin in the supermarket being a prime example.

5.15 Seventh, and finally, customary weights and measures have the distinct advantage for the British that they are familiar.

5.16 On the day after the UKMA published its report, a foreign University lecturer, Dr. Kovalchuk, wrote an open letter to Lord Howe, defending British customary weights and measures. As it summarises many of the points we would also make about the superiority of our system of weights and measures, we reproduce key verbatim extracts of his letter in Appendix 3.

## The cost of past and future metrication

5.17 In his introduction to the UKMA report, Lord Howe claims that what he calls the measures muddle "increases costs, confuses shoppers, leads to serious misunderstandings and causes accidents". In truth, this is an indictment of the decision in the first place to attempt to force through metrication on an unwilling public. The 'measures muddle', say UKMA, is caused by the decision of successive British governments to proceed with metrication gradually. They compare this unfavourably with decisions by other countries such as Australia, New Zealand and South Africa to complete metrication over a period of just a few years.

5.18 The process of metrication itself has indeed been costly. The wholesale conversion of industrial machines to metric cost millions, with little clear practical benefit. Machine tools like lathes, boring and milling machines and other industrial tools and equipment were thrown out of factories, workshops, colleges and schools just because they were calibrated in customary units. Garages went out of business because they could not afford to convert from gallons to litres. Metricating the sale of loose goods meant that tens of thousands of small traders had to scrap perfectly sound weighing machines in pounds and ounces and buy new metric ones. They also had to re-order price labels in metric or in dual units, at significant extra cost.

5.19 Erecting some road signs in metric as well as in customary units (mostly dual height and width signs) has also cost more money.

5.20 There would also be very considerable costs of implementing UKMA's other suggestions for enforced metrication, not least the time and effort devoted to trying to pilot highly controversial legislation through Parliament.

5.21 If 'confusion' has been caused to shoppers, this again is due essentially to the introduction of the alien metric system to shoppers who were familiar with the price of goods per pound. Shoppers were not 'confused' before compulsory metrication began.

5.22 The admission by Lord Howe in the UKMA Report that the introduction of metrication has caused accidents is serious, and we give examples below in our section on the metrication of road signs.

5.23 UKMA is fond of trumpeting the achievements of countries like Australia and South Africa in achieving a relatively swift programme of metrication (see Paragraph 4.11). However, these examples come from countries with populations much smaller than the United Kingdom. Neither do those countries have such a long tradition of political union, and use of customary measures, going back centuries.

5.24 Lord Howe's reference to Magna Carta to justify compulsory metrication is inappropriate and bizarre. He correctly refers to Magna Carta's proclamation that there should be 'one measure of wine...corn...' etc. But the problem Magna Carta was trying to address was that units such as pounds and bushels had different weights in different parts of England. That problem was addressed centuries ago when England did indeed (in the fourteenth century) agree common 'measures' or 'standards' for all its units. Before the announcement in 1965 of the plan to 'go metric', Britons had been able to use metric measurement for 68 years (since the 1897 Act), but apart from a handful of exceptions, like c.c. for car engine size, they had not done so. The introduction of the metric system - not used by British people - was therefore a breach of Magna Carta's demand for 'one measure'.

5.25 Howe goes on to say: "Before then and ever since, every civilised society has recognised the need for one set (and only one set) of standard measures". The U.K. decided in 1897, to permit the use of metric units for all purposes, alongside customary units, in view of their gradual adoption by other countries. However, as we detailed in Sections 1 and 2 of our report, British people use and prefer their own traditional system of weights and measures. In other words, the 'one set of standard measures' they use and clearly prefer, like in the United States, is customary weights and measures. This should be respected and, so far as practicable, achieved by enabling people to revert to using their familiar and preferred measurement system.

5.26 On page 7 of the UKMA Report, Lord Howe states that UKMA is "a small group of ordinary people so fed up with the measurement muddle that they have decided to try and tackle it themselves". It would be more correct to say that the UKMA consists of people who have always been determined to



impose the metric system on the British people no matter how strongly they wished to retain their customary units of weights and measures. A careful reader of the UKMA report will also note how frequently they use the words 'compulsion', 'force' and 'enforcement' in their report. We list just some of the authoritarian demands they make in Appendix 5.

5.27 The UKMA report reveals that metrication can only be achieved with draconian laws and more criminal penalties - plus huge costs, as we explain especially in Section 6 below. UKMA, however, downplays the expense: "Costs need not be a serious obstacle to completing metrication", they claim (page 9). However, as UKMA fully concedes, the following are just some examples of the costs of further compulsory metrication:

(a) the cost of setting up and running a brand new 'cross-departmental' authority to 'manage the change' (page 9)

(b) major 'intensive campaigns of public education' (page 9 and Paragraph 7.9(g)). For example, in Australia, 2.5 million copies of a pamphlet: 'Motoring Goes Metric' were produced

(c) a swath of new legislation with criminal penalties: 'enacting and enforcing any necessary legislation' (page 9), including 'bringing advertising explicitly within the scope of the Prime Marking Order' (Paragraph 7.13). This would occupy significant Parliamentary time as further compulsory metrication would be strenuously opposed

(d) replacing over 1 million road and footpath signs (Paragraphs 7.14 to 7.22)

(e) the cost of training staff to work exclusively in metric (Paragraph 7.9(h)).

5.28 Yet, on page 11 of their report, UKMA admits that, to date, compulsory metrication has been a 'costly and embarrassing saga'! We agree.

## Replies to UKMA

5.29 We now deal with some further specific points in the UKMA Report.

5.30 UKMA complains on page 12 that "metric-only measuring tapes are very hard to obtain in the U.K. The commonly-available dual tapes have Imperial on top and metric on the bottom - making it awkward to use the metric edge". In response, we make the following points:

(a) First, the fact that inches lead over metric on most tape measures sold in the U.K. simply confirms British consumer preference for using inches around the house and garden

(b) Second, tapes with a metric leading edge are available from at least one supplier, but demand for them is apparently minimal

(c) Third, UKMA would like to see metric-only tapes. It is interesting to note that, a few years ago, all MPs and members of the House of Lords were issued with metric-only 30-cm rulers. When asked why '30 centimetres', the producers said 'it was as near as we could get to a foot'! We are aware of one group of schools - the Anglo-European Schools - that insists on metric-only rulers in the classroom and have even confiscated rulers with inches on them! This gives insight again into the 'standardising' mentality of those who wish to impose metrication on a reluctant and resistant population.

5.31 In Paragraph 3.2 of its report, UKMA attempts to demonstrate the extent of metric usage by a superficially impressive list of 16 examples. It is noteworthy that almost all of these are in fact examples of where metric use is compulsory, usually because the government has decreed that metric be used, e.g. in teaching primary and secondary school children.

5.32 UKMA's claim that 'most shops give prices per kilogram or litre' is not correct. According to informal surveys of shopping centres by members of CMS, BWMA and ARM, researching the sale of loose goods, many smaller shops like butchers, fishmongers and greengrocers continue to lead-price in pounds, despite 4½ years since metric price labelling was made compulsory. As one enters many supermarkets, large labels advertising the price per pound of fruit and vegetables appear to dominate the shelves of loose goods. The country's leading retailer, Tesco, is a prime example.

5.33 UKMA's claim (Paragraph 3.2(I)) that 'all British meteorological measurements are in metric units' is, of course, false. On the shipping forecasts, wind speeds continue to be announced using the Beaufort Scale, with reference to miles per hour when speaking of strong winds or gusts. Visibility distances are given in miles, not kilometres. UKMA wishes to force 100% use of metric-only measurements by weather forecasters and reporters.

5.34 In Paragraph 3.5, the UKMA list 15 'serious problems' caused by being 'half metric, half imperial'. Our response to the problems listed is to suggest that, if we allowed British people to use their preferred system of customary measurements, most of these 'problems' would cease to exist. We list the main 'problems' below and suggest how each should be overcome:

(a) The problem of dual pricing - per kilo and pound, per metre and foot, per litre and pint, and so on - should be overcome by allowing freedom of choice. In such circumstances, the market-place would soon lead to producers and sellers reverting to primary use of customary weights and measures pounds and ounces (see Sections 4.18 to 4.26 above)

(b) UKMA say the one 'problem of dual marking of metric and imperial' is the cost. However, that cost is minimal and, in any case, the United States copes with dual labelling without any problem. We recommend that dual customary and metric marking be introduced without delay

(c) The remedy for the 'difficulty of comparing attributes of goods when different units are specified' is, once again, allowing the use of customary

units where currently they are banned. The UKMA cite the example of fridge capacity given in cubic feet when the statutory Energy Label is required to be in litres. The simple answer here is to permit the Energy Label to show capacity in cubic feet

(d) The problem of road contractors 'having to convert metric sign distance into imperial for signage, with consequent cost and potential for error', is simple to solve. Allow them, once again, to measure the distance in miles and yards in the first place! Then there would be no confusion

(e) The alleged problem of people measuring room size in feet and inches and then buying carpets in square metres is not a problem in reality. That's because carpet retailers and fitters are happy take a consumer's measurements in customary units and inform them of the price per square yard. The conversion from cost per square metres to square yard is done in a fraction of a second on a calculator. Many carpet retailers continue to 'lead-price' in price per square yard. Carpet retailers should be able to revert to selling by the square yard if they prefer to

(f) We doubt that there is evidence that overseas visitors are 'confused' by the 'inconsistent mixture of measures used', as UKMA claim, except possibly when shopping for loose goods. Many foreign visitors appreciate Britain being 'different' from other countries in various ways and like the novelty of things like miles and yards on our road signs. Seeing diversity in action is, after all, part of the joy and adventure of foreign travel

(g) The alleged problem of people not being able to calculate their Body Mass Index (BMI) because they know neither their height nor weight in metric is simple. An alternative BMI can just as easily be calculated using feet and pounds. A BWMA member, Robin Willow, has already produced such a BMI formula in customary units, which he calls an 'FPS Body Mass Index' - see Appendix 4.

5.35 In Paragraph 5.3 of its report, UKMA lists six 'considerable problems' if Britain were to revert to the exclusive use of customary weights and measures. As we have stated, we do not advocate a return to exclusive use of customary weights and measures in fields like science and industry where metric use is widespread, thus the problems listed by UKMA would not arise.

5.36 UKMA claims that: "Most mathematics and science textbooks and other teaching material would need to be replaced and syllabuses revised". This is nonsense. Customary weights and measures are already required in the National Curriculum to be taught alongside the metric system. The National Curriculum, school textbooks and syllabuses should indeed be gradually changed to reflect the fact that customary units dominate for day-to-day use and in many other spheres. The National Curriculum should be changed to provide for the teaching of both metric and customary units in equal measure. Exam papers should use both sets of weights and measures, as is common practice in the United States. The extent to which customary measures are required to be taught in schools has gradually been whittled down. The National Curriculum now only requires children to be taught

about 'equivalent' customary units that are 'still used today'. Reports we have received indicate that 'politically correct' OFSTED Inspectors make sure children are taught metric, but fail to ensure they are taught customary units, an indictment of their role, given the admission by UKMA that children live in a society dominated by the use of customary measures. It appears only church schools continue teaching in customary units to any extent.

5.37 The UKMA asserts that: "A considerable part of the population would need to be educated in how to calculate using imperial units". Given the widespread day-to-day use by British people of customary weights and measures, it is hard to understand why there would be any need for 'further education'. One doesn't need calculating ability, indeed one scarcely has to be literate or numerate, to be able - for example - to judge how high six foot is, how much a pound weighs, how far a mile is, or how long a 9-inch knife is. Nor did one need calculation ability in customary units to answer a question on this year's Edexcel Geography paper, which included a chart showing the fall in exports of '60-lb. bags of sugar' from certain South American countries.

5.38 In Paragraph 5.11 of the UKMA report, nine alleged 'myths' about metrication are listed, with a purported correction in each case. Most of these 'myths' are not statements that organisations like CSM, BWMA and ARM would make anyway. To give one example, no organisation campaigning to retain customary measures has claimed that weights and measures all have a British origin. We recognise, as UKMA say, that the Romans introduced some of these. As for UKMA's statement that Fahrenheit was a 'German', it would be more accurate to point out that he was a Prussian born in Danzig (now Gdansk). The simple point is that 'British weights and measures' are those that have been in common use by British people over the past few centuries - and longer in some cases.

5.39 In Paragraphs 5.13 and 5.18, UKMA claim that: "Public ignorance has been exploited by populist politicians and some tabloid newspapers to stir up resistance - for example, by portraying rebellious market traders as 'martyrs'...unfortunate market traders have naively allowed themselves to be used for a political stunt".

5.40 Our first observation on this is that the original reference to 'martyr' came from one of the country's leading Trading Standards officials - Mr Chris Howell, who at the time was Head of LACOTS (now LACORS), the Local Authority Co-ordinating Committee for Trading Standards. It was on 11 November 1999 that he was quoted by the Daily Telegraph as warning traders to comply with the 1994 Units of Measurement Regulations. He declared: "If they want to be martyrs, they will pay a heavy price".

5.41 Far from politicians 'stirring up resistance', it was traders themselves who sought assistance in their tens of thousands after Jeffrey Titford, M.E.P. for the U.K. Independence Party, set up a 'Metric Martyr Fund' in January 2000. This was in response to the intended prosecution by Southend-on-Sea Unitary Authority of Mr Dave Stephens, a butcher, for weighing and pricing

meat in his Leigh-on-Sea butcher's shop in pounds and ounces. Similar 'Metric Martyr' appeals were set up by BWMA and Mr Herron, a close friend of greengrocer Steve Thoburn. Thousands of people donated to these funds, including many from abroad. BWMA, ARM and Neil Herron continue to receive many requests for assistance from traders wishing to continue to serve customers in pounds and ounces. Incidentally, 4½ years after Mr Stephens was threatened with prosecution, huge fines and confiscation of his equipment, he continues a thriving butcher's business, weighing and selling all his goods only in pounds and ounces. He successfully called the bluff of Southend Council who obviously decided that 'discretion is the better part of valour'.

5.42 One point UKMA declines to mention in relation to small traders is the fact that those traders who resisted the Units of Measurement Regulations were, for the most part, simply reflecting and meeting the wishes of their customers. As Steve Thoburn himself said on many occasions: "If my customers asked for bananas in kilos, I'd sell them in kilos".

### UKMA's Definitions of 'Democratic Obligation' and 'Voluntary Acceptance'

"Any far-reaching national change, not only metrication, which is initiated by government, can only be achieved by voluntary acceptance if it is made a democratic obligation on all by legislation" - UKMA Report, page 57

## **6. The case for retaining Britain's road signs in miles, yards, feet and inches**

6.1 This section of our report could be very brief. We need to make just three key points about the stated intention of the government to metricate Britain's road signs at some future date, and the UKMA's extreme demand for this to be completed by 'early 2007' (just 2½ years away).

6.2 These points that are metrication of Britain's road and footpath signs is:

- (a) wholly unnecessary,
- (b) massively expensive, and
- (c) potentially dangerous - at least in the short-term.

### Converting a million-plus British road signs is unnecessary

6.3 We will however add some detail to both these points. The fact that metrication of Britain's road signs is wholly unnecessary is so obvious as

scarcely to need elaboration. Millions of motorists drive on Britain's roads every day and are thus familiar with signs such as these:

Give Way 100 yds

Road Works ½ Mile Ahead

Safe Height 12' 3"

Road Humps for 600 yds' - and so on.

**Metric confusion:** The introduction of metric on some road signs has caused confusion:

6.4 Tens of thousands of motorists take their driving tests each year, and learn the Highway Code, which includes knowledge of various road signs, all of which must be in customary units under the 2002 Traffic Signs Regulations.

6.5 In a recent survey, 98% of British people were able to give their height in customary units, against a mere 29% who could do so in metric. This shows that in one key area of the day-to-day use of measurements - height - there is virtually complete understanding of feet and inches, but very poor understanding of metric. Even in 'metric South Africa', the UKMA report acknowledges (Appendix, page 59) that South Africans continue to use feet and inches for height. The same is true in allegedly 'metric' Canada. The wholesale conversion of road signs to metric would be completely unreasonable, indeed dangerous, given such poor understanding of metric heights and distances.

6.6 In desperation, those who demand the metrication of our road signs sometimes ask: 'What about foreign visitors and continental lorry-drivers?' It would clearly be absurd to decide to change a million-plus road signs just to accommodate foreign tourists and lorry-drivers. If it is agreed that the signs need to be in metric for them to understand, one could equally argue that all other important messages on our road signs should be translated into a host of foreign languages. Or that road signs on the continent of Europe should include information in miles, yards, feet and inches.

6.7 Before arriving here, Continental lorry drivers are required to be trained in road safety issues in the U.K. This includes receiving at least minimal information about British road signs, including key height and width limits.

6.8 As for foreign tourists, most of them will speak English and can readily switch to using miles, yards, feet and inches, just as British tourists rapidly accustom themselves to kilometres and metres when driving abroad. It is noteworthy that the Truckers Road Atlas, which guides both British and foreign lorry drivers as to the sites of all bridge height limits on British

motorways, trunk roads and 'A' and 'B' roads, uses exclusively customary measures, despite the fact that some bridge heights are in dual units.

6.9 It is also highly significant in this respect that very few local authorities have exercised their option to sign bridge heights in dual units. True, they can be found on some main roads and on some major routes in London. Surveys suggest that despite two decades of permissible dual signs, 95% of all bridge heights remain just in customary measures. In the same surveys, over 99% of width limits were found to be just in customary units. We conclude therefore that the vast majority of local authorities believe that the erection of optional metric signage (for safety or other reasons) is unnecessary.

### Converting Britain's road signs to metric would be extremely costly

6.10 When it comes to the enormous cost of a programme to metricate Britain's road and footpath signs, UKMA is coy to the extent of offering no real guidance at all as to the likely cost. Lamely, they refer to Ireland, a country with a population less than one-twelfth of the United Kingdom, and which has far fewer roads per head of population.

6.11 The Irish are carrying out the metrication of their roads in three stages. First, they began converting all signs on major roads to metric.

Thus: 'Dublin - 35' was converted to 'Dublin - 56 km' and so on. All major routes in the Republic of Ireland now have road signs in kilometres.

6.12 The second stage was due to take place over a weekend at the beginning of September this year, when the Republic of Ireland will replace speed limits in m.p.h. speed limits in km/h. The third stage will be the piecemeal replacement of distance signs in miles on minor roads with signs in kilometres, although very little has been done in that respect to date.

6.13 As any recent visitor to Ireland can testify, the result of this piecemeal introduction is confusion. On a cross-country journey, one will come across a bewildering variety of signs in kilometres and miles. Conversion of bridge height signs in Ireland is also piecemeal; most of them remain in customary units. Most Irish people still talk in miles, yards, feet and inches.

6.14 The UKMA Report makes the following comment on the cost of converting Irish speed limit signs: "The cost of changing [speed limit] signage is estimated at 8 million euros [£5.4 million] with a further 2 million euros [£1.3 million] for a publicity campaign". The impression UKMA tries to give is that the cost of conversion of Irish speed limit road signs is modest - £6.7 million. In paragraph 5.7 of their report, UKMA claims that the cost of converting British just speed limit signs would be 'rather less than £20 millions'. They base this, however, on a government estimate made in 1972.

6.15 The U.K.'s population is more than 12 times that of the Republic of Ireland. Just extrapolating on that basis alone, it would mean that the cost of converting U.K. speed limit signs would be around £80 million (£6.7 million x 12). However, there are more roads per head of population in the U.K. than in Ireland and, from observation, a great many more speed limit signs per mile of road. We believe that the cost of converting Britain's speed limit signs would easily exceed £100 million (£100,000,000). Converting distance signs as well would cost several times that (see next paragraph).

6.16 Without question, the wholesale conversion of the road and footpath signage of the United Kingdom to metric would be a massive enterprise with huge costs. Let us first outline what kinds of signs would need to be converted from customary to metric:

(a) all speed limit signs, ranging from 20 m.p.h. in towns to 70 m.p.h. for motorways. On many roads, there are frequent 'repeater' signs of speed limits such as 30 m.p.h., 40 m.p.h. and 50 m.p.h. The total number of speed limit signs in the U.K. is vast

(b) all distance signs on motorways, major roads and minor roads. A very substantial proportion of these signs have more than one distance on them; some contain as many as six distances to separate destinations

(c) all road signs warning motorists to 'Stop', or 'Give Way', in so many yards

(d) all road signs warning of 'Road Works Ahead', or other hazards (e.g. road humps, bridges with weight limits) ahead, in so many yards

(e) the '3-2-1 countdown' signs as one approaches slip roads off motorways, dual carriageways and major trunk roads, currently placed at 300-yard, 200-yard and 100-yard intervals

(f) all bridge height signs, currently overwhelmingly in just feet and inches

(g) all road width signs, even more overwhelmingly in feet and inches

(h) all cycleway signs. Tens of thousands of these have been erected in recent years as organisations like Sustrans, in conjunction with local authorities, seek to expand the nation's cycle routes

(i) tens of thousands of footpath signs.

6.17 The Department for Transport has on several recorded occasions conceded in writing to BWMA and others that dual signage is not appropriate for Britain's roads because it would cause confusion. Despite that, they have permitted dual signage for bridge heights and road widths. It would seem that local authorities have accepted the point about confusion since very few have actually erected dual height or width signs.



6.18 The Department for Transport publishes Regulations on the required appearance and content of road traffic signs in Great Britain. These are the Traffic Signs Regulations and General Directions, last updated in 2002 [S.I. 2002 No. 3113]. They are published under the Road Traffic Regulation Act 1984, run to 447 pages, and contain hundreds of diagrams and accompanying Regulations requiring British road signs to be in customary units only. Metric units may be used in addition to signs in customary units only for height and width limits and the length of vehicles permitted to traverse level crossings. If Britain were to proceed with metrication of road signs, this entire set of Regulations would have to be completely re-worked.

6.19 One consequence of the government instructing highways officials to use metric for official purposes has been a tendency for some authorities, unaware of the Traffic Signs Regulations, to erect road traffic signs in metric, contrary to TSRGD. Examples we are aware of include Islington and Northampton Borough Councils and the Forestry Commission, each of which erected several dozen signs in metric. So did energy company Transco, which used metric-only distance signs in 2001 along dozens of roads crossing its gas pipelines in Kent and Sussex. They had done so twice previously.

6.20 Examples of illegal metric signs have frequently been brought to the attention of the authorities who erected them. In many cases, those authorities have amended or replaced them with legal signs in customary units. In some cases - where local authorities simply refused to convert their illegal metric signs into signs in legal customary units - members of ARM and its supporters have amended these signs themselves. The success of ARM's campaign forced the Department for Transport in July 2002 to write to the Chief Executives of all local authorities in England and Wales, reminding them that it was illegal to erect metric-only signs. ARM is, to date, aware of over 2,000 examples of illegal metric distances having been erected and maintains and regularly updates a Gazetteer of Demetricated Signs.

## Dangers of introducing metric road signs

6.20 The erection of an illegal metric sign can create dangerous situations as the example on the next page clearly shows.

6.21 Other cases include a height sign on an overhang in a Council yard, unnecessarily and inaccurately converted from a perfectly good sign in feet and inches to one in metric only. Unfortunately, the conversion made the height on the metric warning sign nine inches higher than on the previous sign. A lorry drove into the structure, causing thousands of pounds damage.

It took a Conservative Councillor nine months to persuade Council staff to restore the correct sign in feet and inches. As the UKMA concede, introducing metric units on road signage creates obvious dangers. There has been minimal use of metric to date on height and width signs. The safe option would be to scrap all signage in metric in order to avoid confusion.

## The metric-only bridge height sign that caused an accident

6.22 Mr Adam Doggett was a 36-year-old metric-educated London Underground Driver when, in 2001, he was driving his daughter to a party in north London. He came across a low height sign: '1.4m' along a road he had never used before. The low height was a short tunnel underneath a level crossing, where the gates were closed at the time that A.D. was driving up to it. It was illegally signed only in metric units. He did not understand the sign, only being truly familiar with heights in customary units - feet and inches.

He tried to drive through the tunnel, only to find that his Daihatsu jeep became stuck under the tunnel roof. He could only escape by letting down the tyres and reversing. With the help of a BWMA member, he sued Broxbourne Borough Council for having illegally and negligently erected a sign only in metres. He claimed the full cost of repair - £442. The Council paid up in full and has now erected a height warning: 4' 7" of a low bridge. The confusing metric sign is no longer there.

6.23 The Department for Transport has also conceded that because of 'confusion' it would be inappropriate, indeed dangerous, to introduce metric signs piecemeal. Clearly it would create a safety hazard for motorists to be warned, for example, to 'Give Way' in 100 yards on one road and then 'Stop' in 250 metres on another road, and so on. No country in the world has 'dual measurement' marking of road signs. It is clearly in the interest of all road users to use just one consistent system of distances and dimensions that we all understand. In Britain that means retaining miles, yards, feet and inches.

## Other practical objections to metricating Britain's road signs

6.24 The Department for Transport has also conceded that no metrication of road signage should take place before at least half of the U.K. population has been nominally 'metric educated'. Originally, the government thought that this might be achieved in 2006. More recently, they have been giving hints that this date might be 2011. Given all the other strong arguments against the metrication of our road signs, whether or not a certain percentage of the population have been 'metric educated' seems almost an irrelevance. Even if 100% of the population were nominally 'metric educated', that would come nowhere near in itself to being a sufficient basis on which to undertake the comprehensive destruction of a million-plus usable road signs. UKMA concedes itself that children learn metric at school but don't use it much outside school, nor when they leave school. It is notable that UKMA appears not to care about this issue at all, as they fail to mention it in arguing the case for full metrication of Britain's roads by early 2007.

6.25 Thus the only remaining option for the government would be to attempt a larger-scale version of what the Republic of Ireland is doing just

to its speed limit signs in September - carrying out the entire conversion over a few days. This is UKMA's preferred option. In Paragraph 4.21, they note that: "Ministers have argued that any changeover of road signage to metric units must be rapid 'in order to avoid confusion in a safety-critical environment'". In Paragraph 7.19 they say: "UKMA calls on the Government without further delay to announce the date when the UK's road signage will be converted to metric units...early 2007 would be a reasonable and achievable target". UKMA certainly believes that, so far as speed limits are concerned, conversion could be a quick fix. In Paragraph 7.17(c) they say: "The change to metric speed limits need to be rapid (preferably overnight)!"

6.26 We have tried to estimate the likely cost of the wholesale conversion of Britain's road and footpath signs. Various estimates have been made on the number of signs and distances which would have to be changed. We believe that the number is at least one million and may be over 1½ million.

6.27 Some signs would have to be completely replaced. Other signs could be changed by 'over-labelling' - using a vinyl adhesive label to cover over the signs in customary units, e.g. 'Give Way - 100 yds' would become 'Give Way - 91 metres' (or, more likely, 90 metres).

6.28 Very little thought seems to have been given by UKMA or the government about the sheer logistics of organising a comprehensive replacement of signs in customary measurements by signs in metric. Here are just some of the logistical issues which would have to be addressed:

a) how many days or weeks would it need to convert a million-plus road signs?

b) how many staff would be needed for such an exercise? - and given that they would probably need to be paid enhanced rates for working continuously including over several weekends, how much would they need to be paid?

c) the need to overhaul the Traffic Signs Regulations completely

d) how much preparation time would it need to work out how each sign should be converted? Take, for example, the signs along any motorway. After every junction, sometimes more frequently than that, are 'route confirmatory signs' giving the distance to various destinations ahead. A sign on the southbound A1(M) might say, for example:

Newark - 16  
Nottingham - 31  
Leicester - 52  
Huntingdon - 84  
London - 156.

Unless the highways authorities have a correct office record of all signs on British roads, staff will need to visit every distance sign like this one and make a written record of what they say. They will then need to calculate the

equivalent of each distance in kilometres. They will have to submit those calculations to a senior official for approval. A 'works order' will then have to be raised to a commercial signs company, either for a completely new sign or for adhesive labels. Those labels will then need to be affixed to the signs (or the signs replaced) by teams of workmen. For many signs, especially those on motorways and trunk roads, vehicles with extended ladders or even cranes will be necessary to enable the men to affix the labels. The correct weather conditions will be necessary, since affixing adhesive labels cannot be done when it is raining. Multiply that very extensive operation tens of thousands of times over, and the sheer scale of the entire road metrication programme becomes clear

e) there would have to be a comprehensive public education programme to ensure that the public was ready for such a drastic change. It would need television adverts (which would need to be paid for on commercial channels), posters, notices in newspapers and magazines, leaflets and brochures. These would have to be commissioned, devised, drafted, written or produced, published and distributed. Every motorist in Britain (around 30 million) would need to be advised of the changes. Again, it is apparent what a vast exercise all this would be in practice.

6.29 It is almost incomprehensible that an ostensibly responsible body like UKMA should wish to inflict such a massively complicated and expensive operation on the country. Apart from that, it is entirely unnecessary - and there is absolutely no public support for it. Indeed, if the expense involved were ever put to the public, there would undoubtedly be very strong opposition. Moreover, UKMA's proposals appear unrealistic, to put it mildly - for instance, one wonders just how many staff would be needed (no doubt all on double time) for their proposed 'overnight' conversion of tens if not hundreds of thousands of speed limit signs.

6.30 UKMA is also careless about the confusion that would be caused by their recommendation of a 'phased' conversion of distance signs - despite their profession of concern that they wish to avoid confusion. Realising that the cost of converting hundreds of thousands of distances on every major and minor road, cycle path and footpath would be enormous, they say: "The replacement of distance signs could be spread over a longer period". The fact that motorists, cyclists and ramblers, never mind foreign visitors - would all suffer much confusion between signs in metric and customary over a very long period - appears not to matter to the metric zealots of UKMA.

6.31 We have made an approximate estimate of the overall cost of compulsory metrication of road signs - something the UKMA signally, and irresponsibly, has failed to do, in its anxiety to try to persuade the government to convert all our road signs in just 2½ years. We have included all likely labour costs - 'white collar' and 'blue collar'. We calculate that the likely cost would exceed £1 billion (i.e. £1,000,000,000). One only has to mention such words as 'health', 'education', 'disability' and 'housing' to realise in how many ways that money could be better spent.

6.32 The government should immediately announce that Britain's road signs will remain in customary units indefinitely. The current option of using additional metric signage for height and width limits should be ended. If the European Commission objects because Britain is legally required under European Treaties to 'set a date' for road signage conversion, we should set a date of, say, 1 billion years A.D., representing one year for every £1 that enforced road sign metrication would be likely to cost the British taxpayer.

## **7. The democratic case for retaining customary weights and measures**

### Metrication - Missing from the Manifestos

7.1 The democratic case for retaining large-scale use of customary weights and measures is overwhelming and may be summarised very briefly.

7.2 Section 2 of our report, above, explains in detail the extent to which there is overwhelming preference for the retention of our weights and measures. In any democracy, it is the weight of public opinion that counts - or should count, as the title of BWMA's report of the same name emphasises.

7.3 Moreover, compulsory metrication has never once been mentioned in the election manifesto of any political party. Nor has the Queen ever mentioned it while outlining her government's legislation for the coming year in the Queens' Speech at the opening of Parliament. The issue has therefore never been put to the electorate. Successive governments, following their agenda, not the people's, have foisted metrication on an unwilling nation.

7.4 The decision that Britain would 'go metric' was announced by Douglas Jay, President of the Board of Trade, on 24 May 1965. Even then, as UKMA concedes, it was only a decision that Britain would go metric for official purposes. He did not announce that the use of British weights and measures by the British would be completely eradicated, as UKMA now wish. In any event, the Parliament in session in 1965 could only bind that Parliament. Under the British Constitution, the next Parliament could easily decide to reverse this 'decision to go metric'.

7.5 Moreover, we have subsequently learnt that the 'decision to go metric' was effectively made when Harold Wilson, then Leader of the Opposition, spoke to Common Market leaders in 1963. A deal was discussed. Harold Wilson was told that if he should become Prime Minister, which he did in 1964, Britain should start the process of metrication. If Britain announced a decision in principle to go metric, and would agree to scrap pounds, shillings and pence, Common Market leaders would then look more favourably on a further application by the United Kingdom to join them (which is what came to pass). Douglas Jay's metrication announcement in 1965, however, was not heralded in the Labour Party's 1964 General Election Manifesto.

7.6 We shall circulate this report to relevant government Departments, major and minor political parties and other key bodies and opinion-formers. We are confident that our proposals are popular, achievable, and will cost little - nothing like the huge cost of UKMA's massive programme for 'metric completion'. We shall be asking the parties and opinion leaders whether they support our programme in 'Weights and Measures - Britain's way ahead'.

## **8. The international, European Union and cultural aspects**

Is the world '94% metric'?

8.1 We now make a few comments on the case for retaining the use of British weights and measures in relation to the international aspects.

8.2 First, let's look at the United States. The U.S.A. is the world's leading economy. Despite ups and downs in its economic performance, its productivity, output, external trade and wealth continue to outperform other economies. This is achieved using, almost universally, customary weights and measures. These are the same as, or very similar to, British weights and measures. Customary measures are clearly not a handicap to the U.S. economy; they may even contribute to some form of competitive advantage. They are also very strongly supported by the American people.

8.3 It is argued by some that the world is '94% metric' (UKMA report, Paragraph 5.11) and that it is only a matter of time before the whole world 'goes metric'. Pausing there for a moment, if indeed it is 'only a matter of time', why the need for compulsion? In any event, the '94%' figure is one of UKMA's many misleading and exaggerated statements, since their figure includes many countries which are 'officially' metric, but where customary measures are still frequently used on a day-to-day basis.

8.4 Canada is one example, as UKMA admits (pages 57-8): "In Canada, petrol prices are normally displayed with Imperial units more prominent than metric...among the general population, Imperial usage is widespread". Britain is 'officially' metric, but British people use customary measurements day in day out. 'Metric' South Africans, as the UKMA also concedes (page 59), continue to describe their height in feet and inches. In New Zealand, babies' weights continue to be announced in pounds and ounces.

8.5 Even Continental countries still use customary measurements for some purposes. TVs are routinely sold all over Europe according to their screen size in inches. German and Dutch plumbers still use inches.

8.6 Here is a very brief 'round-up' of examples of the use of customary measures in other countries:

(a) In the TV series 'Lahore Law' about Pakistani justice, Pakistani people spoke in the law courts in customary units, despite official metrication

(b) Reports received by BWMA suggest that, in India, feet and inches for height, square feet for real estate and pounds and ounces for the weights of babies are universally used. A recent BBC World Service report on water supplies referred to 16" water pipes and 'one gallon water containers', whilst the 'pint' was seen on advertising hoardings

(c) In Australia, young people buying surfboards discuss how many inches wide and long their boards are, and discuss the height of waves in feet, as numerous Australian surfing websites reveal

(d) Swedish carpenters still normally use the 'Swedish inch' and, of course, Swedes still measure long distances in 'Swedish miles'

(e) A current Internet site about China, chinats.com, states (verbatim): "China uses metric system in weights and measures. It has its own system as well so many people are still using the old system because they have got used to it". They list some of the Chinese units in regular use, which include that old Scrabble favourite, the Chinese mile, or 'li', the 'chi' (about a yard), the 'jin' (roughly 1 lb.), the 'mu' (about a sixth of an acre) and the 'sheng' (1¾ pints).

Many other such examples could be provided from around the world.

## Compulsory metrication and the 'diversity' argument

8.7 However, even if Britain were alone in preferring to keep customary measurements, why should it not continue to do so, if that is what its people prefer? We hear much, these days, of the words 'diversity' and 'inclusivity'. We are encouraged to 'celebrate diversity and difference' and to 'include' those outside the mainstream. This argument surely applies with equal force to systems of weights and measures - or even to language. The UKMA might equally argue - in line with their intense desire to standardise everything - that a few hundred thousand Welsh people should no longer be allowed to carry on speaking Welsh, given that the United Kingdom as a whole speaks English. UKMA would presumably ask: "Why 'waste money' on road signs in Welsh and teaching Welsh - perpetuating the 'English-Welsh muddle'?"

8.8 UKMA claims we need to complete metrication to 'benefit British travellers abroad'. There is no evidence that British travellers abroad are inconvenienced or troubled by metric. Millions of Britons go to Europe for their holidays, yet we remain fond of our customary measures - and indeed remain politically 'eurosceptic'. Travellers might well benefit from one currency, one language, indeed one world-wide system of law and government. But these are emphatically not what most people in the world want. If such a scenario ever came to pass, it would of course be the end of much diversity. Preserving British weights and measures promotes diversity in our

world.

## Customary measures: Our heritage and culture

8.9 Finally, there are the cultural, heritage and identity arguments for the retention of British weights and measures. They have been part of the fabric of this country for over 2,000 years. We can go back at least to the Molmutine laws, devised and codified in around 390 B.C. by the then King of the Britons, Dyfnal Moel Myd (the laws were named after him). These laws used some of today's measures, such as 'feet', 'yards' and 'acres', which go back well beyond even 390 B.C. Each free Briton was allocated five acres of land, with more acres reserved for chieftains and other community leaders.

8.10 Britain has an unbroken tradition of political independence and unity since 876 A.D. when King Alfred unified England, at the same time updating and codifying the Molmutine and Roman laws with, again, many references to British traditional units of measurement. The remarkable Industrial Revolution was based on technological progress on an unprecedented scale. It occurred with the use of customary measures, just as the first man on the moon was taken there using just American customary units.

8.11 In many other areas of life, traditional ways of doing things may give way to new, more efficient and frankly better ways of doing things. To progress of this kind, we have no objection and support it. But customary weights and measures are embedded very deeply in the cultural history, national heritage and even the very language of the British Isles. As many observers in and outside Britain have recognised, the British people have in many respects developed their own way of doing certain things and have a tradition of independence that they wish to maintain. It serves no good purpose to sabotage our long cultural traditions which include using a system of customary units of measurement that has stood the test of time, and has a familiar, natural, human 'feel', in contrast to the scientifically rational, but much less adaptable and less user-friendly, metric system.

8.12 There is also the point that if British people, as UKMA wish, were to be denied all day-to-day knowledge of customary units, it would prevent them understanding all the many references in British weights and measures in, for example, novels, plays and historical documents. When reading references to British weights and measures, it is manifestly helpful if one knows what they actually mean in practice. One person who kindly read the draft of our report pointed out that in George Orwell's 1984, the powers-that-be began re-writing history books to suit their purposes.

8.13 The international and cultural arguments therefore favour the maximum possible retention of British weights and measures.

## The European Union and compulsory metrication

8.14 Finally, in this Section, we deal with UKMA's claim that metrication has been entirely voluntary by U.K Government Ministers, and is not the result



of any coercion from E.U. UKMA claims that the statement: "The metric system has been imposed by Brussels" is one of the nine 'myths' of those campaigning to retain customary weights and measures (Paragraph 5.11).

8.15 UKMA undermines its own case, however, by referring to Britain's 'obligation' to go metric, noting that Britain 'must set a date' for metricating road signs and for 'completing' compulsory metrication. They add: "UKMA believes that the U.K. Government is also in default of its obligations under European Union law [our emphasis] to implement the E.U.'s Units of Measurement Directive which required [our emphasis again] the U.K to 'fix a date' for adopting metric signage". UKMA adds (Paragraph 7.17): "The European Commission did not object to the Traffic Signs Regulations 2002 [which provide for all road traffic signs to be in customary measures]. It is possible that this is because the Commission felt it to be politically expedient to turn a blind eye to the U.K. Government's obvious failure. This does not excuse it".

8.16 We doubt whether the European Commission, or any other E.U. institution, including the European Court of Justice, could actually enforce their two 'Metrication Directives' of 1980 and 1989. Would they really wish to punish the United Kingdom for having signs like '30 m.p.h.' or 'London 50 miles'? It certainly has nothing whatsoever to do with the commonly-stated purpose of the E.U., i.e. to create a 'trading agreement' or 'single market'. Possibly an action could be brought in the European Court of Justice at Luxembourg on the grounds that forcing compulsory metrication on Britain would help achieve the ultimate goal as set out in the Treaty of Rome: 'ever closer union'. But that would be a risky move, deeply unpopular in Britain.

8.17 Finally in this Section, we deal with what may lie behind the European agitation for Britain to metricate. In 1997, BWMA corresponded with Martin Bangemann, a European Commissioner, and his Head of Metrology. The Metrology boss insisted: "Your Imperial weights and measures give you an unfair competitive advantage in your trade with the U.S. That's why we must abolish them in your country". It might help to explain why the European Union, which currently spends a fortune on translators for its 20-plus 'official languages', seems unable to tolerate two systems of measurement.

8.18 When BWMA met Department of Trade and Investment officials two years later to protest against prosecutions of traders for selling in pounds, they said: "They're right. It gives us an unfair competitive advantage and we must strive to eliminate that". Would these officials also consider abolishing the English language because this, too, gives us an 'unfair competitive advantage'? Lurking close to the surface in Europe is an almost visceral anti-Americanism among the political leaders of some E.U. countries. The very close ties between Britain and the U.S. have always stuck in their throats.

Many shopkeepers and traders still price only by the pound, a full five years after the Government passed the Units of Measurement Regulations which

tried to enforce selling loose goods by the kilo. This recent flyer by Hockings Butchers in Ongar, Essex, doesn't even bother to mention the price per kilogram. Maybe if Essex Trading Standards Officers read this report, they'll be paying a 'friendly' visit to tell him how he 'must' sell his steaks and burgers!

## **9. A programme for reform, to be implemented by the next government**

Current policies of the main political parties on weights and measures

9.1 Against this background, we come back to our recommendations (page 5 of our Report). The Liberal Democrats appear to be against prosecutions of traders. The Conservative Party has made some helpful recent policy statements - please see panel below. We believe that the U.K. Independence Party, which finished in third place in the recent European Parliamentary elections, will support all 12 of our recommendations; it has certainly made strong statements in support of British weights and measures in the past.

9.2 The following three statements were downloaded from the Conservative Party's website in August this year - or were seen in correspondence (we should point out that Steve Thoburn did not, as the Conservative Party claims, 'refuse' to serve goods in metric measurements. He merely obliged the 99.99% of his customers who asked for fruit and veg by the pound. For this, he was handed a criminal record by the state):

### Conservative Party statements on weights and measures

3 Mar 2001: "Conservatives have condemned the prosecution of greengrocer Steve Thoburn for refusing to sell goods in metric measurements as 'oppressive'. Shadow Trade and Industry Secretary, David Heathcoat-Amory, told conservatives.com that the prosecution was 'unnecessary, oppressive and against the interest of consumers'. The government should call off these prosecutions and get a change in the Directive...the Conservative Party is on the side of consumer choice".

13 Mar 2001: "Conservatives today vowed to fight compulsory metrication as the Government prepared to sound the death knell for pounds and ounces. We will continue to support freedom and choice for the consumer" - David Heathcoat-Amory.

May & July 2004 (on their website and to a constituent): Bernard Jenkin, Shadow Secretary of State for the Regions, confirmed that: "Conservatives are pledged to reinstate the right to sell [loose] goods in pounds and ounces and will do so. Conservatives are on the side of consumer choice, small businesses, and the pound in all its forms. I agree that no-one should be

forced to use the metric system, nor should Councils be wasting taxpayers' time and money enforcing, investigating and prosecuting honest vendors who sell in imperial measures"".

9.3 The subtitle to our report is 'Britain's Way Ahead'. It is interesting to note that, since deciding to stay outside of the euro, Britain is, according to most economic indicators and expert views, 'way ahead' of the average of the eurozone countries in terms of several key economic indicators, for example, full employment, growth, price inflation, currency stability and inward investment and outward investment. The U.S. succeeds with the customary weights and measures, despite '94%' of the world being 'officially metric'. These are illustrations, perhaps, that Britain - in order to succeed in the world - does not have to go along with everything that other countries do.

9.4 Thank you for coming with us to the end of our report. We are commending these proposals to you as Britain's democratic way ahead for weights and measures - the way out of the mess created by metric zealots.

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I am also very grateful to the President of British Weights and Measures Association, Vivian Linacre, the man who has done more than any other over the years to campaign to retain of British weights and measures, for

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*Tony Bennett, Harlow, January 2005*

## **Appendix 1 – List of BWMA Patrons**

Patrons and Honorary Members of British Weights and Measures Association

To illustrate the extent of support for retaining customary weights and measures amongst distinguished members of British society, we reproduce in full below BWMA's current list of patrons and honorary members:

### **Patrons**

Lord Monson  
Vice-Admiral Sir Louis Le Bailly KBE, CB  
Rt. Hon. Mrs Gwyneth Dunwoody MP  
Sir Patrick Moore CBE

### **Honorary Members**

Peter Alliss CBE  
Clive Anderson  
Trevor Bailey  
Michael Barry OBE  
Christopher Booker  
Ian Botham OBE

Max Bygraves CBE  
Beryl Cook OBE  
Jilly Cooper CBE  
Professor Richard Demarco OBE  
Fred Dibnah  
Roy Faiers  
Sir Ranulph Fiennes OBE  
Edward Fox CBE  
Dick Francis CBE  
George MacDonald Fraser OBE  
Sandy Gall CBE  
Fred Trueman OBE  
Candida Lycett Green  
Simon Heffer  
Peter Hitchens  
Jools Holland  
Prof. Richard Holmes CBE  
CBE Richard Ingrams  
Dr James le Fanu  
Jonathan Lynn  
Dr Richard Mabey  
Christopher Martin-Jenkins  
Robin Page  
R W F Poole, OBE  
Sir Tim Rice  
Andrew Roberts  
J K Rowling OBE  
David Shepherd OBE  
Dr Charles H Sisson CH, DLitt  
Quinlan Terry  
Fred Trueman OBE  
Keith Waterhouse CBE  
Sir Rowland Whitehead CBE  
Anthony Worrall-Thompson

## **Appendix 2 - Metric Weights Confusion**

A Survey of Metric Weights of Packaged Goods

This survey was carried out in September 2003 in Somerfield Supermarket (now the Co-op), Old Harlow, Essex. The following different weights were noted in a 10-minute survey of several supermarket shelves. The difficulty of making sense of so many different large numbers is obvious:

740g - Piccalilli Large  
710g - Jar of Beetroot Slices  
540g - Grapefruit Segments  
500g - Dolmio Original  
480g - Ragu Lasagne Sauce  
454g - Blackcurrant/Strawberry Jam  
440g - Tikka Curry Sauce  
439g - Pineapple Chunks  
432g - Fruit Salad  
425g - Green Giant Asparagus  
420g - Tikka Masala Sauce  
415g - Heinz Baked Beans  
411g - Pear Halves  
410g - Somerfield Red Kidney Beans  
400g - Heinz Spaghetti  
390g - Ratatouille Provencal  
375g - Egg Lasagne  
340g - Chicken in White Sauce  
335g - Chicken Quarters  
325g - Somerfield Sweetcorn Tins  
320g - Dolmio Bol  
300g - Tins of Beans and Peas  
295g - Mediterranean Tomato Soup  
290g - Chestwood Mushrooms  
283g - Curry Paste  
250g - Easy Cook Peas  
220g - Tins of Butter Beans  
213g - Bob the Builder Spaghetti  
205g - Spaghetti Hoops  
190g - Pesto / Cranberry Sauce  
185g - J West Tuna in Garlic  
180g - Tartare Sauce  
176g - Mashed Potato Mix  
175g - Mint Sauce  
140g - Apple & Herb Stuffing  
110g - Houmous  
100g - Polish Mayonnaise  
97g - Somerfield Mashed Potato Mix

85g - Sage & Onion Stuffing

73g - Table Salt Refill

## **Appendix 3 - Dr Kovalchuk's Letter**

### Dr Kovalchuk's Response to Lord Howe and the UKMA Report

Below are extracts from Dr Kovalchuk's letter to Lord Howe, written the day after Lord Howe appeared on TV to promote the eradication of British weights and measures. As far as we know, Lord Howe has not yet answered it. Dr Kovalchuk is Research Fellow in Physics at Aberdeen University:

9 July 2004

"Dear Lord Howe,

I have grown up in a fully metric country and have received a metric-only education. I also have experience of scientific work in modern Physics and Mathematics, both in a University in a metric country and in a British University.

I fully agree with you that we have to do something to end the 'mess' of 'two confused, competing systems' of weights and measures. In my opinion, the experiment with introducing the French system of weights and measures into this country should be terminated as soon as possible.

I have tried both systems and I find the Imperial one far better than metric. The only advantage of the metric system that I can see is an easy dividing or multiplication by 10. There is a big disadvantage of the metric system, though. Most users of metric make common mistakes in calculation by placing decimal points in the wrong place. This is due to the mess with the number of prefixes - milli-, deci-, hecto-, kilo- etc. before the same unit - litre, metre etc.

This cannot happen if Imperial units are used. There are different units cleverly elaborated for different purposes though they may easily be converted one into another. The Imperial system has simple, logical, natural units. For measuring the length of things that can be held in the hand, inches are used; for larger objects such as houses and boats, another useful measure was developed - the foot; for measuring short distances on land at which, for example, a person can clearly see another person, yards are used; for long walking, riding or driving distances, we use miles which are naturally evolved from counting thousands of paces.

On the other hand, the metric system is synthetic, artificial and not practical. The centimetre is too small for everyday use. Metres are too big



for things like home improvements. Only practical, natural systems, such as the British Imperial system, last a long time.

Yours sincerely

Dr Alexander Kovalchuk

## **Appendix 4 - The 'Customary' Body Mass Index**

### The 'Body Mass Index' (BMI) in Customary Measures

The 'Body Mass Index' is a rough guide that can be used to determine if you are about the right weight, or underweight or overweight.

It is usually calculated in metric. The metric formula is: 'Divide your weight in kilograms by the square of your height in metres'. The normal range for the BMI calculated in this way is 20 to 25. A metric BMI value of under 20 means you're probably underweight; a metric BMI value over 25 means you're probably overweight.

The calculation is just as easily done in customary measures. Indeed, because most British people are familiar with customary units, it's much easier, since you don't have to bother converting to metric in the first place. Using customary measures, the normal range for your BMI is roughly 4 to 5, which is very easy to remember. If your 'customary measures' BMI is under 4, you're probably underweight; if it's over 5, you're probably overweight.

### The BMI formula in customary measures

Simply divide your weight in pounds by the square of your height in feet.

Here are three examples:

You weigh 9 stone 7 and you're 5' 6" tall. That's 133 lbs. and 5.50 feet.

5.50 squared is 30.25. Your BMI (133 divided by 30.25) is 4.40.

*Your weight is normal*

You weigh 14 stone 6 and you're 6' 1½" tall. That's 202 lbs. and 6.12 feet.

6.12 squared is 37.45. Your BMI (202 divided by 37.45) is 5.39.

*You are overweight*

You weigh 8 stone 13 and you're 5' 8½" tall. That's 125 lbs. and 5.71 feet.

5.71 squared is 32.60. Your BMI (125 divided by 32.60) is 3.83.

*You are underweight*

Ready Reckoner

1 stone = 14 lbs. 13 stone = 182 lbs. 1" = 0.08 feet  
2 stone = 28 lbs. 14 stone = 196 lbs. 2" = 0.17 feet  
3 stone = 43 lbs. 15 stone = 210 lbs. 3" = 0.25 feet  
4 stone = 56 lbs. 16 stone = 224 lbs. 4" = 0.33 feet  
5 stone = 70 lbs. 17 stone = 238 lbs. 5" = 0.42 feet  
6 stone = 84 lbs. 18 stone = 252 lbs. 6" = 0.5 feet  
7 stone = 98 lbs. 19 stone = 266 lbs. 7" = 0.58 feet  
8 stone = 112 lbs. 20 stone = 280 lbs. 8" = 0.67 feet  
9 stone = 126 lbs. 21 stone = 294 lbs. 9" = 0.75 feet  
10 stone = 140 lbs. 22 stone = 308 lbs. 10" = 0.83 feet  
11 stone = 154 lbs. 23 stone = 322 lbs. 11" = 0.92 feet  
12 stone = 168 lbs. 24 stone = 336 lbs. 12" = 1 foot

## **Appendix 5 - 'The Language of Force'**

"The language of force" - examples of the authoritarian and repressive content of the UKMA report

For those who have not read the U.K. Metric Association Report, we reprint below just a few examples of its 'enforcement mentality':

"The only solution is to complete the changeover to metric - and as swiftly and cleanly as possible" - Lord Howe, Foreword

"We need to carry through a necessary reform in a decisive and co-ordinated manner" - page 8

"We must standardise on one single system as soon as possible" - page 8

"The metric changeover can be swiftly and painlessly completed..." - page 9

"We must declare unequivocally that all Imperial measures will be phased out for official use, require public agencies to be fully metric, phase out Imperial units in property transactions, weather reports, the National Health Service and clothing sizes, set targets and timetables, and enact and enforce any necessary legislation...given full and rapid commitment by the Government, this programme could be achieved within three to five years" - page 9

"We must implement the full adoption of the international metric system from all official, trade, legal, contractual and other purposes as soon as practicable by taking the necessary action to resolve the current unacceptable situation" - page 1

"The voluntary approach has failed" - page 23

"We must resolve the situation, standardise on one single system and cease using the other system, complete the changeover to the metric system and discontinue the use of Imperial units" - page 29

"Weights and Measures law - like all laws - should be enforced, even if, regrettably, this entails prosecuting unfortunate market traders who have naively allow themselves to be used for a political stunt" - page 34

"It is not in the national interest that irresponsible opposition should continue to obstruct a necessary reform" - page 37

"We must declare unequivocally that all Imperial measures will be phased out for official use, empower a cross-departmental authority to help manage the change, require all publicly-funded agencies, including charities, to work towards becoming exclusively metric, set timetables and target dates for completion, introduce any necessary legislation and ensure that it is enforced" - page 38

"...if the government is seriously committed to completing the metric changeover, then it must itself set a good example and require (not simply advise) all its Civil Service Departments, Agencies and contractors and all bodies to whom it makes grants or loans to work exclusively in metric units..." - page 44

"The existing law on price marking and weighing/measuring loose goods at the point of sale should be enforced. Following the final rejection by the European Court of Human Rights of the appeal by the so-called "metric martyrs", there is no longer any excuse for local authorities and traders to defer enforcement or compliance action" - page 44

"We must bring advertising explicitly within the scope of the Price Marking Order. It should be illegal to advertise goods for sale giving prices, weights, quantities or other measures exclusively in Imperial units...'supplementary indications' should be phased out and then metric units should be the only units permitted in advertisements..." - page 46

"UKMA therefore calls upon the UK Government without further delay to announce the date when the UK's road signage will be converted to metric...Early 2007 would be a reasonable and achievable target..." - page 47

"The changeover programme will also need to include legislation to revise speed limits, revise various Regulations, including the Traffic Signs Regulations and General Directions [447 pages of Regulations which stipulate that Imperial units should be used on roads] and the Motor Vehicles (Construction and Use) Regulations to require legible km/h on speedometers..." - page 48

"UKMA believes that the Government should take the lead and make it mandatory for public bodies to use exclusively metric units in weather

reports and forecasts, including in their press releases. Wind speed should be shown in kilometres per hour..." - page 49

## **Appendix 6 - Australian Customary Units**

Australia is claimed by metric zealots to be '100% metric'. Go to any of Australia's magnificent beaches, however, and you will hear Australians talking about the height of waves in feet, and about the dimensions of their surfboards in feet and inches. And after surfing, they'll probably go for a drink. In this chart of popular drink sizes in Australia, taken from Coopers' current website, you can easily see how the Imperial system of liquid measures - pints and fluid ounces - has completely survived metrication. A pint is 568 millilitres, usually rounded up to 570 millilitres in Australia, while a half-pint is 284 millilitres, normally upgraded to a round 285. Whole numbers of fluid ounces still survive in Aussie drinks language.

On the 'International' section of the 'Discussion Forums' BWMA's Internet site, [www.bwmaonline.com](http://www.bwmaonline.com), you'll see many more examples of customary measures being used day in, day out in supposedly 'metric countries':

### **A message from the late Mr Dave Stephens:**

[from a newspaper article, 2003]

*"Carry on Campaigning: That's the message from butcher Dave Stephens, the first British trader to get an enforcement notice - from Southend-on-Sea Borough Council - for selling in pounds and ounces. Pictured above with his wife Mandy, he defied official threats that they would take him to Court. Later that year he earned BWMA's annual 'Golden Rule' award. He's now moved his butcher's shop to Hornchurch, where, five years after facing prosecution for refusing to sell by the kilo, he continues to sell by the pound".*