

# International hallmarking – pipedream or possibility?

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## Introduction

A recent survey of international hallmarking confirmed that it was in some disarray with, outside the mainly European-based Vienna Convention countries, only local mutual acceptance agreements existing that may or may not be based on sound quality principles. This predominance of local hallmarking systems and standards of fineness inhibits the growth of a truly international jewellery market. Since this survey was completed, the implementation of the European Court's ruling with respect to the 'Houtwipper' judgement within the Community has introduced further complexities.

On the other hand, the efforts of the Technical Committees of the International and European Standards Organisations, ISO and CEN, have enabled agreement to be reached on a wide range of matters including standards of fineness and methods of assay. While further agreement on some outstanding details is required, we have probably made more progress than that achieved in the area of the harmonisation of hallmarking in Europe.

Yet the requirement that gold, silver or platinum jewellery contains the claimed amount of that precious metal remains prime but is probably the most abused aspect except where rigorous hallmarking systems are in force. Effective though these systems are, they generally impose many constraints and difficulties on the manufacturer and importer. This paper reviews the current status of international hallmarking and the options for a more open but credible system, some of which are enshrined in the proposed EU Hallmarking Directive. Ultimately however, any system must ensure that fineness

marks are accurate and offer the consumer adequate protection while minimising the difficulties that manufacturers and importers face in conforming to it.

While the Birmingham Assay Office currently depends on the continuation of the UK Hallmarking Act of 1973 to a considerable extent for its existence, this paper is not a justification of the Act, nor a recommendation of universal adoption. Far from it, at Birmingham we have recognised the difficulties that operation under such controls present for the manufacturer and importer and, therefore, are taking a far more pragmatic view of the future of hallmarking both within the UK and internationally. At the same time, we are taking all the appropriate actions that we feel necessary, particularly in the area of new technology, to provide a hallmarking service second to none for our customers. However, we believe strongly in, and remain committed to, the protection of the consumer with respect to precious metal articles and their claimed precious metal content.

## Hallmarking – do we need a credible system?

So, is it us awkward British yet again refusing to give up outdated but very traditional practices in the face of modern international business practice or are we, in fact, protecting the Trade and the consumer, at least in the UK, from widespread fraud? This then is the first issue – how comfortable are we with self-applied precious metal marks compared to those applied by appropriately accredited bodies? We can return later to possible definitions of what “an appropriately accredited body” might be.

My own experience, based on over 20 years working with precious metals, until recently with an international bullion refiner/supplier for jewellery and other applications, is that without some effective controls within our industry, articles containing less than the marked or claimed precious metal content will be in circulation. For instance, at Birmingham Assay Office, we have:

- i) purchased items from retailers across Europe, the Middle and Far East, assayed them and

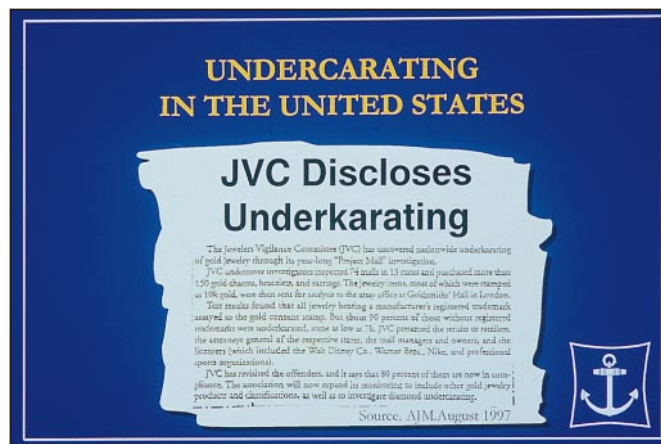


Figure 1 - Underkarating in the United States. [Source: AJM, August 1997]

confirmed that some were significantly below the claimed/marked assay.

- ii) seen reports from reputable bodies such as the World Gold Council and the Jewellers Vigilance Committee in the USA, Figure 1, that confirm that undercarating is occurring in many, if not all, countries where hallmarking is not a statutory, controlled and policed operation.
- iii) received requests and enquiries from many countries for assistance in the setting up/policing of a hallmarking system in order to address significant levels of undercarating and improve the credibility of their jewellery for local, tourist and export markets.
- iv) become aware that, in many parts of the world, jewellery is traded on assay and weight e.g. \$20.00 per gram for 22ct chain. This is acceptable only where the gold content is as claimed.
- v) detected instances of fraud and counterfeiting, even with our strong hallmarking disciplines in the UK.

This establishes that, while many operate honestly, there are always those who will undercarat and, the weaker the controls, the more extensive and widespread the practice.

**The status of international hallmarking**

So where do we stand with respect to hallmarking systems worldwide? Many countries operate credible hallmarking systems backed by legislation, Table 1. These include several European countries, although many, it could be argued, are not renowned for their jewellery industry, and one or two others in the Far East. I am not fully up to date on the efficiency of some of these systems today. A number of other countries are now actively establishing precisely what system is appropriate to their jewellery industry, some of which are significant producers, notably in the Middle East, Table 2.

There are also a number of “big” players, in terms of producers and buyers, who are not, as far as I am aware, considering the introduction of an accredited and controlled

marking system at this time, Table 3. This is not to say that the established, major and reputable manufacturers in these countries are not including the appropriate amount of gold, silver or platinum in their products. Some of these countries have hallmarking-type legislation and penalties where offences are detected. In the USA, for instance, there is such a system; however, the policing of this is not clear or efficient.

Some of these countries also accept negative tolerances on precious metal content, 3 parts per thousand in the USA, for instance, and also the Netherlands which has a system otherwise very similar to the UK. Yet there is no doubt that jewellery manufacturing competence in these countries is excellent, comparable to best available, obviating the need for this tolerance.

So why have it? Does this type of approach not just allow all “smart” operators to reduce their make-up precious metal contents accordingly? After all, a large user saving 3 parts of gold per thousand on, say, 20 tonnes per annum of fine gold processed gains 60 kg gold per year on his profitability.

I have always appreciated, throughout my technical career within the Trade in the UK, that we all started off on the same basis i.e. the same precious metal alloy make-up, in order to ensure successful subsequent hallmarking of the finished article. All the other aspects that make up the quality of an item of jewellery are, of course, open to competition – colour, design, finish, production method, efficiency and productivity. I have yet to be convinced that negative tolerances benefit anyone except the

**Table 1. Countries with independent hallmarking systems.**

<b>COUNTRIES WITH AN INDEPENDENT HALLMARKING SYSTEM</b>	
Austria	United Kingdom
Cyprus	Netherlands
Czech Republic	Norway
Denmark	Portugal
Finland	Singapore
France	Spain
Hong Kong	Sweden
Ireland	Switzerland
Malaysia	Uzbekistan



**Table 2. Countries considering an independent hallmarking system.**

<b>COUNTRIES CONSIDERING AN INDEPENDENT HALLMARKING SYSTEM</b>	
Abu Dhabi	Saudi Arabia
Dubai	South Africa




Table 3. Major “jewellery” countries without an independent hallmarking system

MAJOR JEWELLERY COUNTRIES WITHOUT AN INDEPENDENT HALLMARKING SYSTEM	
Canada	Taiwan
Germany	Thailand
Italy	United States
Japan	



supplier in the long term. Just to underscore this point, of the 26 million articles hallmarked in the UK in 1996, only 25,000 were rejected for being below the required standard, i.e. only 0.1% of the total.

It is quite probable that in most enlightened countries, even where there is not any credible marking system, the major players, from bullion dealers through to manufacturers, generally ensure that their products meet the accepted marked standards; this would be particularly true where there is a high dependence on exporting into “hallmarking” markets. However, we all know that there are some who do not work to the accepted standards and will undercarat their products to be more competitive in what is a very competitive industry.

The case for a system that effectively addresses the undercarating issue, therefore, remains as strong as ever, both for local and international markets. This is a major hurdle that we, as representatives of the international jewellery trade, have to address if we are to create a truly free international market.

### The UK hallmarking system

It is instructive to review the current UK hallmarking system and examine its strengths and weaknesses. Then, perhaps, we might be able to better identify the requirements of an internationally acceptable system. In summary, hallmarking has been operating in the UK since the 1300s,

when it was first introduced to stop currency undercarating, i.e. gold coins used for trading. The current Hallmarking Act of 1973, with its exemptions and subsequent amendments, requires that all items to be described and sold as gold, silver or platinum must be submitted to one of the four UK Assay Offices – London, Birmingham, Sheffield and Edinburgh – for sampling, assaying and hallmarking. Sampling is completed on any parcel of items submitted, according to agreed and documented procedures, by a combination of touch acid testing, X-Ray fluorescence analysis, scraping and cutting. Assaying (the measurement of gold content) is completed by one of the internationally recognised techniques i.e. cupellation (fire assay) for gold or potentiometric titration for silver. Most Assay Offices are accredited to ISO 9002 and some also to NAMAS in terms of their sampling and assaying operations.

There are *no* negative – or so-called working – tolerances allowed, although clearly the limitations of the methods of sampling and assaying are recognised in a practical sense by the Assay Offices. The Act also specifies solder qualities/ quantities, requirements of electroforms, acceptable precious and base metal coatings, together with identifying parts that may be made from base metal if no suitable precious equivalent exists.

Any imported goods must be submitted in the same way as local

produce, although through a UK agent who acts as sponsor and is responsible for the goods. The normal marks applied are those of the sponsor, which will be unique, the standard of fineness and the symbol for the marking office, Figure 2. Other marks such as the date letter, the fineness symbol, that of the Convention (see later) and of the millennium are optional, Figure 3, since the 1st of January 1999 when the Act was amended to conform to the ‘Houtwipper’ Ruling. Therefore, you have a system that enables full traceability of the article in the event of a subsequent query or dispute. Furthermore, the Assay Office, by applying its marks, actually takes over legal responsibility for the assay of the articles for their lifetime; any mistakes that are subsequently detected, therefore, become a matter of compensation by the Office concerned.



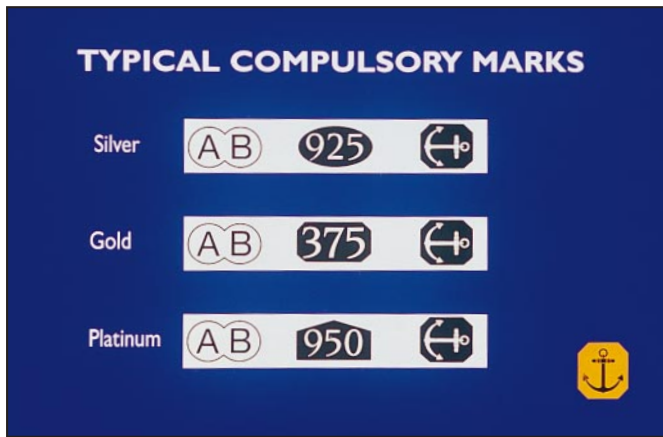


Figure 2 - The compulsory hallmarks of the UK



Figure 3 - The optional hallmarks that may be applied in the UK

The Offices charge for hallmarking, typically £0.35 – 0.37 (\$0.56 – 0.59), although there are minimum charges for single articles and small parcels. It is these charges that fund the Assay Office, not Government, and, if any Office were no longer financially viable, they would have to close and the remaining Offices would take over their customers. These charges not only have to fund the operation, the building, equipment and staff but also the development of new methods and technologies to help us improve our activities to the benefit of our customers. For example, Birmingham Assay Office has spent in excess of £300,000 (\$480,000) on state-of-the-art equipment over the last 24 months.

A representative Committee, the Hallmarking Council, controls, monitors and influences the operations of the four Offices. The Council comprises not only

representatives from the Offices but also from Government, trade bodies, consumer organisations and lay persons, in total 18 to 20 members. Hallmarking charges are controlled in that the Council set the maximum price that can be charged for each type of article. Over 26 million articles were marked in the UK last year, of which over 11 million were processed through the Birmingham Office.

The major criticisms of this system, with which I have some sympathy, are:

- i) local manufacturers have to interrupt their production processes, usually at the part-finished stage; importers have to submit their goods prior to distribution.
- ii) the sampling and marking, particularly of fully finished items, generally imported, can result in their requiring some re-finishing before sale.

- iii) all products have to be sent off site to an Assay Office for marking which can take 2 – 3 days in total with delivery.

The advantages of this hallmarking system are that it:

- i) assures and polices through an **independent, externally accredited** third party, defining the assay for the life of the product.
- ii) has evolved into an internationally recognised method of quality assurance.
- iii) is envied by many countries who face difficulties in attempting to “clean up” their precious metal trade.
- iv) allows UK marked jewellery to be traded internationally into most markets without the need for further testing.

There are attempts, of course, to beat the system – such as transposing marks by cutting them out of one article and soldering them into a lesser quality or antique article, or by casting marks into an article. All such marks not applied directly to the article by an Assay Office are illegal and the operator is prosecuted when identified. We have our own security/recognition marks within all the hallmarks that we apply, to ensure that we can identify ours from those of the counterfeiter.

I mention these attempts to circumvent UK Law, some of which are quite clever, simply to illustrate that even with our very disciplined system there is always someone willing to attempt fraud. Without our very effective controls, more would be tempted, our market would be debased and the ability to prevent and detect fraud would be severely reduced.

One additional point with regard to enforcement in the UK: We have Trading Standards Officers located in most County Councils. These Officers are responsible for policing all aspects of trading, including Trades Descriptions, counterfeit goods and enforcing the Hallmarking Act at the retail end of the business. Their task would be impossible without the initial control of hallmarking policing the majority of the market.

Finally, I can complete this picture of hallmarking in the UK for you by illustrating that what appears to be a very simple operation of applying a few marks to articles can involve considerable expenditure. As I stated earlier, we have spent over £300,000 investing in state-of-the-art technologies in the last two years or so. We have new analytical techniques such as Inductively Coupled Plasma Spectrometry and X-Ray Fluorescence, and high technology CAD/CAM milling equipment for punch manufacture. We have also invested in three laser marking machines that will apply hallmarks to delicate, hollow and fragile articles that otherwise could only be marked with unacceptable damage. These have the other advantage of being able to apply marks to finished jewellery without the need for subsequent re-polishing to remove underside bruising or damage.

Laser marking is a major advance, being the first significant change to the method of applying of hallmarks since their inception. It is significant that such developments, so advantageous to the manufacturer and importer, are available to all through the efforts and investment of a centralised and independent hallmarking body. This would not necessarily be so if the marking system was not independent.

**International hallmarking – mutual recognition**

There are a number of arrangements between countries with respect to mutual and non-mutual recognition of hallmarks. Generally UK-applied marks are recognised and accepted world wide as are marks from some other countries. There are more formal arrangements between countries as follows:



Figure 4 - The Member States of the Vienna Convention

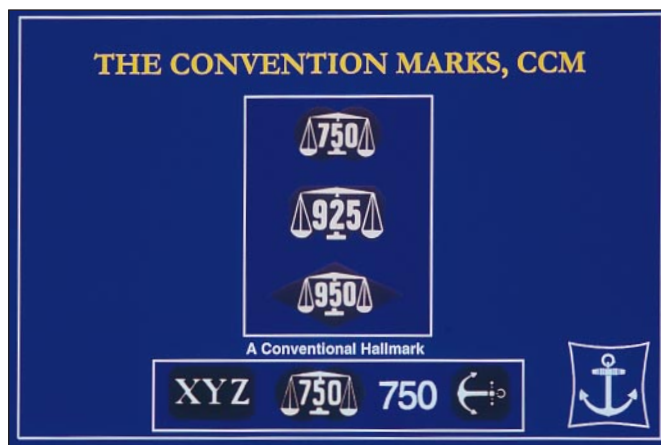


Figure 5 - The Convention, CCM, Hallmark



Figure 6 - Members of the Association of European Assay Offices

*i) The Vienna Convention*

The acceptance of UK hallmarked jewellery internationally is important to many of our customers. At present, we have the Vienna Convention with 10 members, Figure 4, who have agreed to accept each others marks without further testing, provided that one of

those marks is that of the Convention, Figure 5. There are several Convention members who are also member States of the European Community (EC). There are also usually many observers from non-hallmarking countries at Convention meetings which occur every five months or so.

**Table 4. Countries whose Marks are now recognised by the UK under the 'Houtwipper' judgement**

**Countries whose marks are now recognised by the UK under 'Houtwipper'**

AUSTRIA	PORTUGAL
DENMARK	SPAIN
FINLAND	SWEDEN
IRELAND	SWITZERLAND
NORWAY	



**Table 5. The Standards of Fineness allowable in the UK**

**The standards of fineness allowable in the UK**

GOLD	SILVER	PLATINUM
375	800	850
585	925	900
750	958	950
916	999	999
990		
999		



1st of January 1999. Some other member States have not yet fully implemented the necessary changes. In effect, this has 'forced' the UK to recognise items marked by Member States deemed by the Government to be "equivalent" under the terms of the 'Houtwipper' judgement, Table 4. This means that goods so marked can be sent directly for sale without reference to a UK Assay Office. At the same time, there has not been any attempt, other than to change fineness standards in line with ISO 9202, Table 5, to align the specific details of UK law with that in any of these now recognised countries. Therefore, we have in the UK certain regulations controlling combinations of precious metals, use of base metal parts, fineness of solders, for home producers which could be contravened in goods being imported directly to point of sale from one of the now recognised 'Houtwipper' countries.

These changes further isolate those countries which have no basis for claiming equivalence under 'Houtwipper', including Italy and Germany. This is singularly unfortunate bearing in mind the size of their jewellery industries, particularly when we should all be striving to establish a system, acceptable to all, that all can operate fairly and reasonably. It is too early to comment on the full implications of 'Houtwipper' but clearly its enforced implementation by the Commission will probably not result in a harmonised system through Europe, and may never do so.

*ii) The Association of European Assay Offices*

Members of this body, 15 to date, some of whom are also in the Convention, also accept our UK hallmarks without further testing, Figure 6. I should stress that not all of these latter agreements are mutual. Our recognition and acceptance of other marks remains based on equivalence to our own standards only; some of these member countries have negative tolerances, which are the main obstacle to mutual recognition. Furthermore, there are countries who accept our marks who are not members of either of the above.

*iii) The European Court Decision on 'Houtwipper'*

However, these "voluntary" agreements, based on recognised

standards of operation and mutual assessment, have been rendered somewhat superfluous by the recent implementation within the EC of the European Court's 'Houtwipper' decision of three or four years ago. This decision occurred as a result of a challenge to the Dutch Hallmarking Laws which, following judgements within the Netherlands, eventually reached the European Court. In summary, the Court supported the principle of local hallmarking regulations but insisted on recognition of marks on the basis of equivalence of the system applying the marks, the intelligibility and information provided by them. Any challenge on the basis of equivalence will be determined by a Court in the 'receiving' country.

The necessary changes to law were implemented within the UK from the



**Table 6. Marking Annexes Proposed in the EU Hallmarking Directive**

<p><b>ANNEX II</b></p> <p>The manufacturer shall operate the approved system for final product control by lodging an application for the assessment of his quality system for the articles concerned with a single notified body of his choice. (External Accreditation for Manufacturers Marking.)</p>
<p><b>ANNEX III</b></p> <p>The manufacturer or his authorised representative, who must comply with the certain obligations, shall ensure and make a declaration to the effect that the articles concerned satisfy the requirements of the Directive which apply to them. (Unaccredited Manufacturers Marking.)</p>
<p><b>ANNEX IV</b></p> <p>The articles are submitted by the manufacturer or his authorised representative to an independent accredited third party for checking and marking. (Accredited Third Party Hallmarking.)</p>

**International hallmarking – is it possible?**

Undoubtedly, countries that do not have such a rigorous hallmarking system would find the implementation of the UK Hallmarking Act onerous and traumatic, if not impossible, and this is quite understandable. One only has to review attempts to harmonise hallmarking within the EC to realise the difficulties that can occur. Countries such as the UK, Ireland, the Netherlands and Portugal are naturally reluctant to give up systems that have effectively protected the consumer and industry from widespread abuse. Other member states, Germany and Italy particularly, who have extensive jewellery industries, clearly recognise the difficulties of setting up similar systems in order to achieve harmonisation. The result – disagreement, prolonged and lengthy negotiations, (several years to date) and the production of an EC Directive so compromised that it could jeopardise the future of the European jewellery industry, Table 6.

It is Annex III that is preventing agreement. Those countries with effective policing systems are convinced that this option will enable jewellery from all sources, internally produced and imported, to enter the EC Common Market on the basis of unsubstantiated manufacturers' claims concerning quality standards at the point of production. Furthermore, why should reputable manufacturers bother with ISO 9000/NAMAS

accreditation, and the associated expense, when others will not.

One other major flaw in this Annex III is that it will require intensive policing at the retail end to ensure that product meets claimed/marked standards. The UK Assay Offices will certainly not do this unless they are paid to do so and the UK Government has made it clear that no extra funds will be available for this, nor will others in Europe be willing to do so either. So who will complete the effective policing of a jewellery trade that is totally open and uncontrolled?

Not all is lost, as there is some co-operation within Europe. The World Gold Council have sponsored EMAGOLD, which comprises approximately 113 members in Europe who are committed to the quality ethic including caratage conformance across the full spectrum of 14ct and higher caratage gold jewellery. While their external audits for members are not yet particularly rigorous, the longer term target to use ISO 9000 as the quality standard within the organisation is a most appropriate commitment.

Additional hope is provided by European technologists who have successfully co-operated to produce a wide range of International and European Standards that define acceptable finenesses, methods of assaying, marking, solders etc. These have taken several years and considerable negotiation to agree. It is unfortunate that we cannot agree on a system to enforce these technical standards and to effectively police the

precious metal content of jewellery to prevent widespread abuse.

**International hallmarking – a system?**

So what is the answer? On the one hand, there are many of us around the world who feel very strongly (and probably rightly) that only by effective policing can the customer be protected. On the other hand, many such systems in effect now are not ideal or are not particularly effective. Therefore, international trade in precious metal jewellery is constrained and probably is based more on forced recognition, who you trust, completing your own QC checks, complying with irritating local regulations where they exist, or any combination of these.

We should remember, however, that all things change in time. While we in Europe might feel that we are protected and that the *status quo*, whatever that might be – independent or unaccredited marking, must continue, there are growing threats to our comfortable manufacturing base and markets, from Turkey, India and several countries in the Far East. Very few of these countries have any form of controlled hallmarking system and yet they are growing in output, expertise and design capability. They are successfully penetrating our traditional markets. Their much lower cost base presents a formidable threat (or opportunity, depending on which side of the fence you are on). While we cannot protect ourselves from this, we can at least ensure that the base for competition is set through a formal, practical and monitored hallmarking system, operating to minimise undercarating.

There is no doubt that hallmarking can be more easily and conveniently completed by the manufacturer during the production of the articles. The use of recognised quality control systems backed by the appropriate checks should assure the assay from the melt through to finished product. Many articles could be marked during production processing by incorporating the marks in dies, on tags etc. Some though would still require marking as a separate process after finishing. However, the disadvantages of self-marking by manufacturers, which already occurs in many countries, have been discussed earlier and certainly those countries with rigorous hallmarking disciplines are not prepared to allow uncontrolled manufacturers marking.

In fact, a possible answer lies in compromise where competent manufacturers who achieve the appropriate and confirmed standards of operation can mark their own goods. Those who do not wish to self-mark could have the fallback position of using the local independent, probably Government linked, accredited body who can mark for them. This local body could also be responsible for both accrediting and checking (auditing) local manufacturers.

So what would be the requirements of a hallmarking system that could be

operated in the major jewellery trading countries to facilitate uninhibited and free trade? May I suggest these:

- i) No negative tolerances.
- ii) Agreed standards of fineness of alloy and solders, perhaps based on ISO 9202.
- iii) Defined and accepted methods of sampling and assaying to be used in the event of dispute. (Many of these are already documented as ISO/CEN Standards.)
- iv) Simple clear marking system with traceability.
- v) Assaying/Marking permitted by any body that is independently accredited to a recognised operating standard by an approved body.

This will require:

- i) Implementation of local legislation in all significant jewellery trading countries enforcing the system, together with a Code of Practice;
- ii) Agreement on the Standard of Operation for Markers, to which they must operate, that assures the precious metal content of the articles produced or imported.
- iii) Accreditation to that Standard for those that meet it and then, subject to the registration of their “sponsors” mark, allow them to mark their product and that of others subject to the appropriate checks if they wish.
- iv) Mutual recognition to all participating countries on the basis of equivalence.
- v) The setting up of a controlling body with representatives from each participating country.

Other requirements would be:

- i) The co-ordination of a register of sponsors, marks and accredited markers in each country.
- ii) Procedures for discussing relevant technical details as new practices and design arise.
- iii) Agreement on the procedures for the resolution of a dispute.

Provided that the Standard of Operation is internationally recognised and independently audited, e.g. ISO 9000, such marks should be internationally recognised and traded as such.

At first sight this appears to be a

considerable undertaking. However, most members of the EC have accepted the principle of marking by accredited manufacturers for instance, if you remember the Annexes proposed within the Directive. ISO 9000 is internationally recognised as an acceptable standard of operation and there are many around the world who are certified assessors of the system.



In addition there is, within the frameworks of the ISO/CEN Technical Committees, the Convention and Association of European Assay Offices, the basis of an International Hallmarking Council. Most major jewellery trading countries have local organisations, such as the MJSA, BJA, NAG, FOI etc, who could co-ordinate these actions on behalf of the Trade that they represent.

### Conclusions

While carat conformance remains a contentious issue, international hallmarking is currently in some disarray, with the various Governments unable to reach firm agreement. Yet technical agreement on a wide range of aspects of jewellery caratage and methods of assaying exists at International and European Standards levels.

Extensive discussions over several years have failed to produce a harmonised hallmarking policy even among the relatively few members, in global terms, of the European Community. Worse still, as we have seen, the on-going implementation of the 'Houtwipper' ruling may isolate one or two important members of the Community who are also major jewellery producers. This is not at all desirable or beneficial to international jewellery trading and requires constructive discussion. I have attended several jewellery seminars and symposia in the last two or three years and have been encouraged by the inclusion of topics such as hallmarking and quality assurance on their agenda. The innovation of EMAGOLD and its potential expansion into North America (AMAGOLD) also indicates that these issues are being discussed and addressed. We shall see if this slow but steady move to improve local carat conformance and quality in general eventually leads to an expansion in the

number of mutual acceptance agreements throughout the world's major jewellery producing countries.

The benefits of a credible system, accepted world-wide, that encompasses certain fundamental principles, such as zero tolerances, independently accredited markers, common standards of fineness, approved methods of sampling/assaying and traceable marks, are obvious in terms of ease of manufacturing, marking and exporting precious metal jewellery. The UK and other countries with similar systems will continue to defend the rights of the consumer, despite the confusion of 'Houtwipper', comforted at least with the knowledge that the hallmarks applied are generally recognised and accepted in most significant jewellery markets. We need constructive, realistic and co-ordinated international efforts to establish a credible and workable alternative to these independently operated systems. Only when this occurs will the 'pipedream' turn into possibility.

### References

- 1 "JVC Discloses Underkarating", Anon. AJM Magazine, August 1997.
- 2 The Hallmarking Act 1973, HM Stationery Office, London.
- 3 The Convention on the Control and Marking of Articles of Precious Metal, Geneva, January 1994.

**Editor's note:** Since this paper was presented at Vicenza, India has announced the introduction of a voluntary hallmarking system in 2000, under the auspices of the Bureau of Indian Standards, which has many of the desired features outlined by the author. India has the largest domestic gold jewellery market in the world.