

## **Part Two**

Report on

# **WARNING LABELS FOR MATCHES**

Conducted by The Qualitative Consultancy

## 1. BACKGROUND

Research carried out for the Department of Trade and Industry has highlighted the problem of children **under 5** playing with matches, as referred to in part 1.

Even the most conservative estimate, based on HASS figures and other sources [Sambrook 1997] suggested that over the past 10 years about 6,000 fires have been started by children under 5 causing an estimated 800 injuries and 40 deaths, while another report [NERA 1996] yielded even higher estimates. And this is not just a problem for the UK - the equivalent estimate for Europe over a similar period is 11,500 fires - a sobering total [Sambrook 1997].

The typical scenario is that it is early morning, a young pre-school age child, is in the bedroom or lounge of their home, before the parents are awake, or they are elsewhere in the house. The child is playing on its own or with siblings with a box of matches, which have been found in the home. The child strikes the match, setting alight the bedding, curtains or its own clothes.

While over time the accident figures show a downward trend, reflecting the decline in match sales, nonetheless there is scope to further reduce these tragic accidents. The DTI therefore commissioned this research.

Part 1 of the research focused on the possibility of child-resistant (CR) packaging for matches, similar to that which exists for medicines and for which a European Safety Standard is being developed for lighters. This work concluded that whilst such a design was feasible, there were extreme difficulties relating to the nature of the production process for matches, environmental concerns, as well as the product's low unit price. The study showed that it would be difficult to introduce CR features in today's match containers without significant changes to current production lines. There would be a very marked increase in production costs, which in turn would be passed on to the consumer through a two to threefold price increase, as well as the environmental deficit of a move from recyclable card to plastic.

Attention therefore turned to alternative ways of reducing the risk of fires caused by children under 5 playing with matches. Suggestions made following the study at Part 1 of this report included safety awareness initiatives, but a key recommendation whose development is described in this report, relates to the added value of an improved **safety warning label** on matches, to encourage parents to store matches more safely.

The Consumer Affairs Directorate of the Department of Trade and Industry therefore decided to commission a piece of consumer research which forms part 2 of this study, with the following objectives:

**To conduct a qualitative and quantitative survey of consumers**

- To establish their view of the principle of safety labelling
- to suggest a relevant label and/or symbol to warn the consumer of the dangers of (very young) children playing with matches

The Qualitative Consultancy was commissioned to carry out this research, working in partnership with NOP Consumer and P.I. Design International.

The research was conducted in three stages, as follows:

**Stage 1**

This stage was qualitative in approach and comprised 4 group discussions. These groups were of mixed gender. There was a mix of smokers and non-smokers represented, but all bought and used matches. The group breakdown was as follows:

- BC1 children 1 - 5 Berkshire
- BC1 children 6 - 12 Edinburgh
- C2DE children 1 - 5 Leeds
- C2DE children 6 - 12 North London

The groups were carried out by The Qualitative Consultancy, with the active participation of P.I. Design International.

**The topics covered by the groups were as follows:**

- Perceptions of hazards in the home
- Awareness of and attitudes to warning/safety messages and symbols
- Attitudes to fires in the home and their causes
- Attitudes to matches
  - usage and behaviour around matches
  - awareness of risks
  - awareness of current warning label
- Idea generation exercise (paired)
  - verbal message
  - visual symbol
  - sharing and discussion of idea.
- Review of fire statistics and current warning label

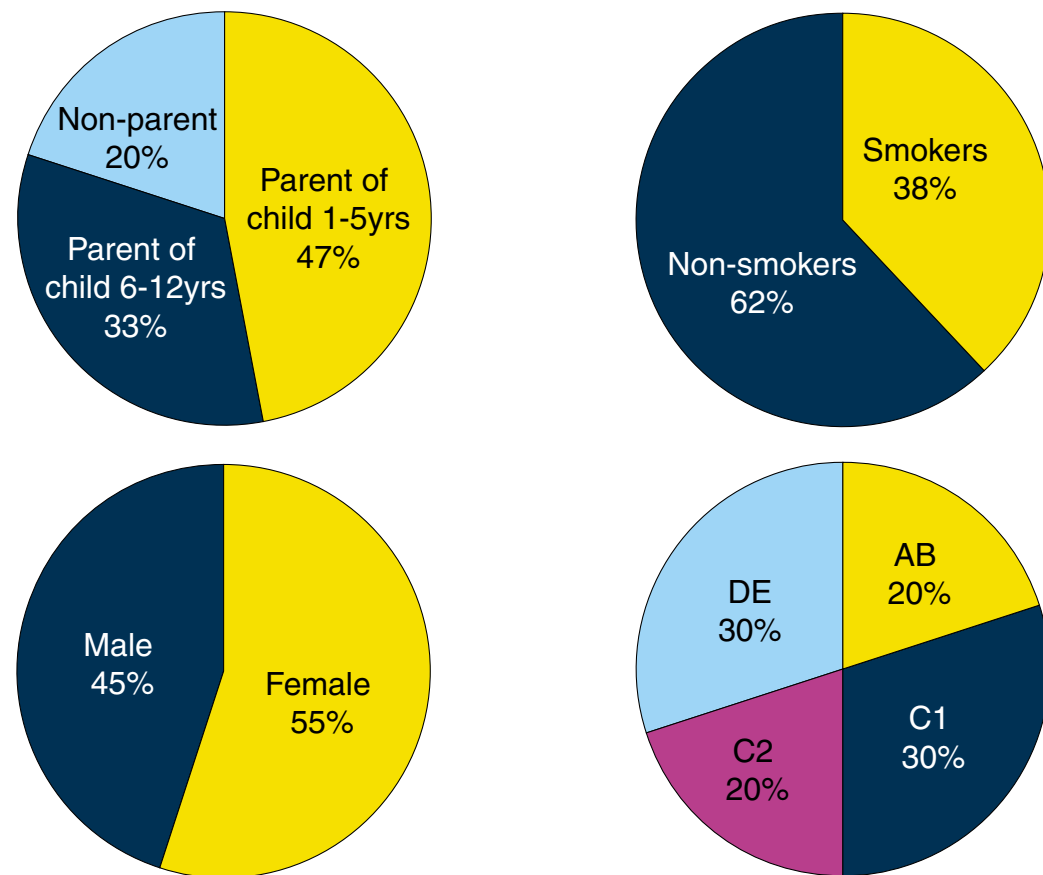
Following the analysis of groups, and consumers' views and ideas, The Qualitative Consultancy and P.I. Design International produced a range of options for both verbal messages and visual symbols. (A selection of these designs appears in Appendix 1 of this report.)

These were presented and discussed at a meeting with the DTI, which included representatives from industry, home and consumer safety groups, standardisation and the Child Accident Prevention Trust. A total of 10 verbal messages and 6 visual symbols were chosen to go forward to the next stage of research. (These are illustrated in the relevant section of the report, page 39, and in Appendix 2.)

**Stage 2**

This stage was also qualitative in approach, and comprised one-to-one interviews using The Qualitative Consultancy’s Tactix technique.

The sample comprised 60 respondents, broken down as illustrated in the following pie-charts:



**The format of the interview was as follows:**

- Usage and storage of matches
- Description of matchbox
- Awareness of and attitudes to current warning label
- Reactions to ideas for new verbal warning
  - communication, preferences etc.
- Spontaneous ideas for visual symbol
- Reactions to ideas for visual symbol
  - communication, preferences etc.

- Overall preferences for verbal warning and / or visual symbol
- Comparison of preferred warning with current warning label

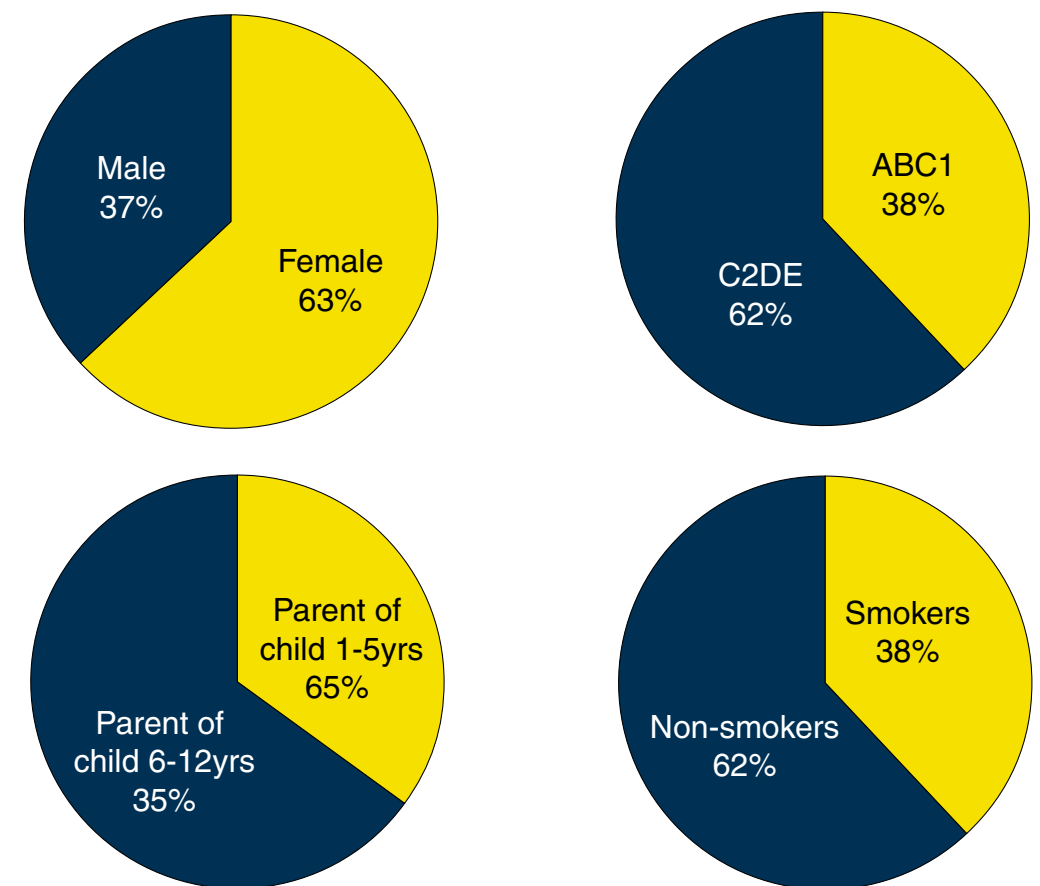
This stage of the research was carried out by The Qualitative Consultancy.

Following presentation of the results from this stage of the design, two verbal messages and one visual were selected for the final, quantitative stage, to be tested against the current warning label. (Again, details of the test stimulus will be found in Appendix 3 of this report.)

**Stage 3**

This stage of research was quantitative in approach, and comprised a statistically representative sample of just under 800 face-to-face in-home interviews across the country.

The sample broke down as illustrated in the following pie charts:



Half the sample initially evaluated one of the new options and half the current message, following by a comparison between the two. All respondents then saw and evaluated the second new option.

NOP Consumer carried out this stage of the research.

## 2. THE CONTEXT: WARNING LABELS ON CONSUMER PRODUCTS

The findings from this project confirm the view reported in part 1 of the study that consumers see warning labels on products as an accepted part of the information and advice, which appear on modern-day products. Just as they have become accustomed to finding information about, for example, weight, nutritional data or instructions for use, so they also expected to see some warning if any use - or abuse - of the product, could involve an element of risk.

Respondents therefore, had no difficulty in identifying and locating a wide range of warning labels, including those on household cleaners, aerosols and medicines, and with a variety of verbal and visual messages. Examples of these are - 'Do not exceed the stated dose'; the black cross on an orange background; the flame symbol for flammability and the hand symbol indicating corrosiveness. Within this, there are of course 'good' and 'bad' warning labels - ones which communicate effectively and ones which do not - but it is clear that the *principle* of warning labels on products is well accepted and accepted by today's consumers.

At an individual level, the consumers we interviewed varied in the importance they attached to warning labels and the extent to which they claimed to be personally influenced by them. Some claimed little interest or influence, some were more alert to warning information when using a product for the first time, while a minority claimed to be very preoccupied with safety and therefore with all warnings. (Of course, the extent to which consumers *comply* with warnings is another issue again. These subjective views may not be directly correlated in every case with compliance.)

Overall, many respondents felt that 'common sense' and their own experience of products were, on a day-to-day basis, more influential than warning messages as such. However, this did not mean that they thought warning labels are a waste of effort. The vast majority gave wholehearted support to the presence of warning labels on products, considering that they played a variety of related roles:

- To reinforce the consumer's common-sense notions of safety and risk
- To act as a reminder to the consumer to behave in a safe way with products on every occasion
- To educate in 'new' situations e.g. when new products come onto the market or when new users enter a product field
- To inform about 'surprising' hazards (solvent abuse being a good example of this)

Consumers see the prime responsibility for providing this kind of warning label as lying with manufacturers, who know the composition of their products. Consumers believe that manufacturers should warn them about products' hazards as well as emphasising their functions and benefits. And indeed there is an underlying requirement in product safety legislation to ensure that consumers are made aware of hazards, which may not be immediately obvious. Cynical consumers will frame this as manufacturers 'covering their backs'. More positively, there was clear evidence in this research that consumers respect companies who provide clear safety information. They believe that this is an indicator of a responsible attitude towards their products' users.

Finally, while respondents were quick to identify the responsibilities of manufacturers in relation to product safety, nevertheless they did not absolve themselves and other parents/adults of their own 'duty of care'. They needed to be aware when a product could involve a hazard, and vigilant to minimise the risk to their families, themselves and other people. But - and this is an important point to which we shall return later - they were prepared to admit that 'people' (including themselves) could be careless and that mistakes could happen. Hence there was justification for warning labels to counteract the vagaries of human behaviour in the context of everyday life, and a clear need for a framework of safety legislation which acknowledges the value of warning labels in relation to product safety.

### 3. CONSUMER ATTITUDES TO MATCHES

In the UK, matches are a commonly used consumer product. Market data for the UK show an estimated 14.80 *billion* match lights per annum [source: Sambrook 1997], and in the quantitative work nearly half the sample used matches once a week or more.

Clearly, then, matches have a well-established place in the British consciousness. It is therefore perhaps not surprising that, when the subject of warning labels on matches was first raised with consumers, while some were immediately in favour, the initial response from others was that such labels were unnecessary. The latter felt that everyone knows what matches are, everyone knows that matches cause fire (indeed, that is their function) and therefore everyone knows that matches should be kept in a safe place and out of the reach of children.

However, it did not take a great deal of reflection for consumers to reach more of a consensus that warning labels on matches should be taken seriously and that their value was clear.

When citing the main fire risks in the home, consumers did mention matches - and specifically children playing with matches - but not usually in the first round of suggestions, which more often included factors such as open fires, cigarettes, candles and frying. This indicates that there could be some benefit in making matches, and the fire risk they represent, more top of mind and challenging the complacency, which their very familiarity may create.

As suggested earlier, respondents recognised that behaviour around matches was not always 100% perfect. Consumers tended initially to talk about 'other parents' being bad or neglectful, but it was not long before they themselves were admitting occasions when they had not been as scrupulous as they should have been. They mentioned times when matches had been accidentally left in an unsafe place and there was the feeling of 'There but for the grace of God..'. This was firsthand evidence of the risk caused, as matches are such an everyday item, and of a need for a forcible warning to encourage safe practices.

Last but not least, it was clear in talking to parents about hazards in the home that fire was a much-dreaded phenomenon. Only a few had experienced a fire in the home, but widespread publicity about tragic fires, and word of mouth, meant that fire was something to be feared and, as far as was humanly possible, avoided.

For all of these reasons, therefore, consumers felt that there was justification for a warning label on matches, which as with all labels would fulfil a range of roles and might therefore most effectively combine verbal and visual elements:

- A warning in words to parents and other adults (and possibly older children) to reinforce 'correct behaviour'
- A symbol to draw adults' attention to the words *and* to communicate directly to children

### 4. MATCHES: THE CURRENT WARNING LABEL

In the first round of qualitative research, the group discussions, there were indications that the current warning on matches was making rather a weak impact. Consumers felt that the wording - Keep away from children - 'stated the obvious' and that its size and positioning on the box was low-key.

This impression was reinforced in the one-to-one Tactix interviews, where respondents were asked to describe a matchbox from memory and then specifically to focus on the words which appear on matchboxes. Even when focusing on words, only a minority spontaneously mentioned the warning label. Although, once the box was seen, recognition improved, there was still a consistent view that the current warning lacks impact and power.

Further evidence for this was found in the quantitative work, where both of the options for new warning labels were significantly preferred over the current message.

Overall, therefore, we believe that there is a strong case for reviewing the warning label on matches and introducing a new, more effective message.

## 5. MATCHES: A NEW WARNING LABEL

### QUALITATIVE WORK

During the first stage of group discussions, respondents were invited to come up with their own ideas for warning labels for matches. These were discussed with each other, the moderator and the designer who attended the groups. A wide range of ideas was generated, and some consistent themes emerged:

#### Verbal messages often contained:

- 'alerter' words like Danger! or Caution!
- specific references to 'children'
- mentions of the capacity of fire to 'kill'

#### Ideas for visual symbols included:

- flames
- a child's face and/or body
- the use of a cross or line
- the colours red, orange and yellow, combined with black

Following analysis of the group findings and review of consumers' ideas, a range of verbal warning messages and visual symbols was presented for discussion and selection to go forward to the next stage of qualitative work, the one-to-one Tactix interviews.

It was considered that nine of the possible warning messages had sufficient potential to be explored further, together with the warning currently used on matchboxes. These warnings offered a range of options in terms of hardness/softness, use of 'alerters'; specific vocabulary and so on:

- Keep away from children (current message)
- Keep them safe
- Keep kids away from matches
- Remember! Put me away
- If you can see me, your kids can too
- Think! Can your child reach these?
- Even young children can cause fires
- Danger! Fire kills
- Fire causes damage and death - keep matches safe
- Fire can kill and injure

As regards the visual symbols, six were selected by respondents to go forward to the next stage of research, again representing a range of possibilities from the more explicit graphic to the more abstract approach. (NB those selected were not directly based on consumers' suggestions but brought together the strongest aspects of the ideas through a process of interpretation and professional design input.) Those which were rejected at this stage were those which all felt, subjectively, to be too extreme and over-emotive and therefore not worth testing in further research.

The six selected symbols were as follows:



Burning House



Triangle



Text Box



Burning Figure



Pentagon



Child's Face

The findings from the second stage of qualitative research (Tactix) gave some clear indications as to the way forward.

## Verbal messages

Respondents on the whole rejected options which they felt were ‘standard’, predictable or ‘obvious’ i.e. ‘Keep away from children’, ‘Keep them safe’, ‘Keep kids away from matches’ and (to an extent) ‘Remember! Put me away’. These were felt to give little or no sense of the danger or consequence of misuse, and at their worst could be viewed as ‘verbal wallpaper’ and easy to ignore.

A second group of messages were better received – ‘If you can see me, your kids can too’, ‘Think! Can your child reach these?’ and ‘Even young children can cause fires’. These were felt to make one think afresh about matches and thus had the potential to generate a ‘call to action’, either explicitly or implicitly through the use of unusual wording, ‘alerters’ and / or questions.

The messages of the third group were seen as the ‘hard-hitting’ set: ‘Danger! Fire kills’, ‘Fire causes damage and death...’ and ‘Fire can kill and injure’. These pushed the message to the extreme, and there were differences of view. The respondents from social and economic group C2DE, tended to favour the *hard* approach, believing that it was appropriate ‘shock tactics’ to create awareness and action. ABC1 respondents were more doubtful. They were concerned that the extreme approach might be actively off-putting, and some tended to prefer the *softer*, call to action approach, which they felt, was practical and addressed the issue of parental responsibility. (The class difference is important given that the weight of scientific evidence supports a socio-economic explanation of health inequalities – as shown, for example, in the Acheson report on Health Inequalities. Acheson: Independent Enquiry in to Inequalities in Health 1998: Sir Donald Acheson, Chairman.)

Overall, two messages emerged as having the most potential – the *hard* ‘Danger! Fire kills’ and the *softer* ‘Think! Can your child reach these?’ – with widespread agreement on the merits of the ‘alerter’ and the inclusion of the words ‘your child / children’ as helping to create impact and relevance.

## Visual symbols

There was a clear preference in the Tactix research for the ‘Burning Figure’ symbol, with ‘Burning House’ a distant second. The other options attracted minimal support, being seen as either too abstract / emotion-free (‘Pentagon’, ‘Triangle’ and ‘Text Box’) or too gruesome (‘Burning Face’). ‘Burning Figure’ was felt to be strong, easy to understand and a powerful communicator, although there were a few concerns that it might be *too* explicit and also that it might in some cases even *attract* children to the box due to its bright colours and simple graphic style.

Although the main focus of the Tactix research was on adults, where children accompanied respondents, we made some informal exploration of the symbols’ communicative powers. The results of this were in line with adults’ views of what children’s ‘take-out’ would be and also with a child psychologist’s evaluation, which is reported below.

## QUANTITATIVE WORK

Following presentation of the Tactix results and review of the learning from both stages of the qualitative research, the DTI and the research agencies decided to proceed to quantitative research with three options:

### ‘Burning Figure’ with the verbal message ‘Danger! Fire kills children’

- this is the hard option, with the addition of the word ‘children’ reflecting the finding that this did add significantly to impact and relevance

### The current warning label – ‘Keep away from children’

- the baseline or control

### ‘Burning Figure’ with the verbal message ‘Think! Can your child reach these?’

- to provide a *softer* option in the event that the ‘Danger!...’ message was off-putting

These label options were presented in the form of a mock-up of the back of a matchbox, in colour and to scale, for both Household and Standard matches. (Consideration was given to the use of 3D stimulus but this would have introduced a distracting brand element and it was felt that more elaborate stimulus was unnecessary given consumers’ familiarity with matches as a product.)

(The stimulus is in Appendix 3 of this report.)

The quantitative work again generated very clear findings on which decisions could be confidently based.

The first stage of the interview asked participants to respond to either the Hard or the Current message, enabling a matched comparison of their responses. When asked how likely they were to buy the product, there was a significantly higher likelihood of purchase for Hard than for Current, consistent across all demographic types, and the safety warning was a major reason cited for likelihood of purchasing the product with the Hard message. (This was assessed to ensure that the warning label did not unduly alarm consumers.)

Among the minority of those unlikely to buy the box with the Hard message, negative points about the safety warning were mentioned but only at a very low level, and there were a few spontaneous comments about attractiveness to children (probed later in a specific question).

When asked whether the pack was different to their usual product, a majority recognised

the Hard message concept as different and most of these cited the safety warning, indicating that it did have impact.

Respondents were then asked a series of questions about their image of the company making the featured matches, and these showed a significantly higher positive rating among people exposed to the Hard message concept on all dimensions – a trustworthy, caring and commercially responsible company.

When shown both the Hard message and Current packs and asked which product they would be most likely to buy, there was a very strong preference for Hard over Current (76% to 11%). This was especially marked among the key target audience of female C2DEs with children aged 5 or under. The safety warning was by far the most significant reason given for this preference, although among the small minority, who preferred the Current approach, dislike of the visual symbol was the main reason given. This finding, which was statistically significant, suggests very clearly that the Hard message warning does not unduly alarm consumers.

When asked if they felt a safety warning was a good idea, the overwhelming majority (93%) endorsed its presence, reinforcing the findings from the qualitative stages.

This was further reflected in respondents' strong support for statements about the Hard warning such as 'Manufacturers should provide this on all matchboxes', 'Manufacturers who show the warning care about their customers' and 'Would make me think about where I leave my matches'.

Included in the set of statements was 'Would attract some children to play with matches', and this was endorsed by about a third of the quantitative sample. While not a majority viewpoint, this was sufficient to confirm that this may be an issue, and so guidance was sought from a child psychologist.

Dr Harriet Gross, an academic developmental psychologist at Loughborough University, tested a total of 62 children aged 2½ - 5 in a privately run day nursery, a pre-school playgroup and an inner city nursery school. She assessed how salient and meaningful the new symbol was, and whether the symbol had any effect on the attractiveness of the pack to under 5's. Her conclusions were that "the symbol seems unlikely to make the packaging more attractive to younger children; when the warning symbol is located, it is more often correctly identified than not, and older children [within the under 5's group] are aware of the consequences of fire. In the light of these findings, I can see no reason why the symbol should not be adopted".

Finally on the quantitative stage, respondents were shown the Softer message and asked whether they preferred it to the Hard message and to the Current approach. Overall, the Hard message was significantly preferred to the Soft, with this preference coming

principally from C2DEs. (ABC1s did not show such a strong preference.)

Again it needs to be borne in mind that C2DEs are the main target for this exercise given the higher incidence of fire accidents in this social grouping, and this, taken with the numerical preponderance of C2DEs in the total population, weights the argument in favour of the Hard warning.

When the Soft approach was compared with the Current warning, there was a significant preference for Soft over Current, indicating that both new options were considered appreciably better than the current approach.

It seemed clear, therefore, from the quantitative research that there was substantial support for a change of warning label and that the Hard option of the 'Burning Figure' visual and the message 'Danger! Fire kills children' was the strongest candidate to be the new warning.

## 6. CONCLUSIONS

1. This research confirms that consumers do see warning labels on products as having an important role to play in today's marketplace. Such labels are seen as a legitimate and effective route for the delivery of safety information, as well as being an indication of a responsible attitude among manufacturers towards the users of their products.
2. It is not surprising that consumers already recognise the link between matches and fire, and the risk that is therefore associated with the use and storage of matches. However, this does not negate the value of a warning label on matches. People are aware of the correct, safe procedure for storing matches in the home, but a number of factors combine to create a clear justification for the presence of a warning message on matches:
  - their commonplace nature which can lead to complacency,
  - the fact that human behaviour is never 100% reliable,
  - the potential seriousness of the consequences of carelessness.

So there was strong support in our research sample for the presence of an effective message on all matchboxes, which would act as a reminder at each time of use and reinforce latent awareness of the need to be careful.

3. The warning message currently in use on matches – 'Keep away from children' – is seen by consumers to be relatively low-key in terms of size, positioning and content. Furthermore it provides advice on how to deal with the hazards which the consumer regards as obvious. And as the research suggests, what is far more effective is a sharp reminder of the consequences of what happens if you leave matches lying around near young children. For some consumers the new warning provides thought-provoking information as they had not previously associated match play fires with the death of children. There was widespread support for a more prominent, thought-provoking and powerful message, the prime role of which would be to remind parents (and other adults) to put matches out of children's sight and reach, thereby reinforcing common sense and established awareness.
4. The research also indicated clear support for a combination of a verbal warning and a visual symbol. Respondents believed that this was the most constructive and effective approach to challenging complacency about match safety. The verbal warning would speak to adults and older children (even including those of primary age), while the visual symbol would act as a 'hook' to attract attention. While the focus of this project was on finding a warning label which would address the issue of under 5's and matches, in this and other research it is clear that older children can play a part in 'policing' the behaviour of younger siblings. So a warning message may be relevant to them also.
5. The process of developing an alternative warning label involved three incremental stages of research, building on consumers' own attitudes and ideas, adding in professional expertise in terms of safety expertise and design skills and then taking ideas back to consumers for further reactions and evaluation. We feel confident that this staged approach, which has included both qualitative and quantitative work, has created

a recommendation for a warning label, which will be a more effective communicator of the need for vigilant behaviour around matches.

6. The research yielded very clear and directional findings. The Hard 'Danger! Fire kills children' message performed better than the current message on virtually all of the test dimensions - and it was particularly appealing to C2DE parents who, as noted earlier, are a key target for this initiative. Furthermore, it was also preferred overall to the Softer message, although even this was preferred to the current message. Visually, there was strong support for the 'Burning Figure' and evidence that it added to the impact and effectiveness of the warning label. It seems clear, therefore, that there is a strong case for replacing the current warning with the 'Burning Figure' visual and the message 'Danger! Fire kills children'. This conclusion is firmly based on consumers' views that this will be a more effective warning, not causing undue alarm or off-putting to purchase and something which signifies a responsible attitude on the part of match manufacturers and retailers. Therefore, the final recommendation is as follows:



7. As regards possible risk of the visual attracting children to the box, this was raised at a low level in qualitative work, and did receive some minority support in response to a specific prompt at the quantitative stage. However, the child psychologist's report provides reassurance that this is not a significant problem. And in any case, the issue is the difference between the current box, which already has the potential to attract via its illustrations and 'sound effects', and the proposed new box, which has the added benefit of a strong safety warning.
8. The size of the warning label - actual and relative - was not directly evaluated in this research. However, we believe that the size used in the quantitative stimulus material (about a third of the available area) is the minimum that should be considered and that any reduction would reduce the impact.
9. The current European safety standard for Matches EN 1783:1997 specifies 'Keep away from children'. We feel that this research should be made available to the standards

bodies in the UK, Europe and elsewhere, and that this standard should be amended to allow this new warning, when it has been fully tested on the relevant consumer population. To date it has only been tested in the UK.

10. We believe that this research has taken labelling as far as it can go. Labelling is only one part of a consumer safety strategy. There does seem to be a need to raise consumers' awareness of the risk of **under 5's** causing fires with matches. On going publicity material by the Home Office, the DTI, the Fire Service voluntary sectors and others are clearly valuable.
11. Finally, throughout this research the Department of Trade and Industry has had consultations with the main UK match suppliers. The DTI wish to express their thanks to the suppliers in the UK for their support in this work.

## 7. REFERENCES

- Sambrook:** European Research – accidents caused by children under 5 playing with lighters and matches. Sambrook Research International 1997.
- NERA:** The hazards caused by children under 5 playing with cigarette lighters and matches in the UK. National Economic Research Associates 1996.
- Acheson:** Independent Enquiry into Inequalities in Health. Sir Donald Acheson 1998.