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REPORT

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THE IMPLICATIONS OF THE
ADDITIONAL EXCISE DUTY (TAR SURCHARGE)
LEVIED BY THE UNITED KINGDOM ON CIGARETTES
YIELDING 20 MG OR MORE OF TAR PER CIGARETTE

COM(80) 790 final

Report on UK tar surcharge

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REPORT BY THE COMMISSION TO THE COUNCIL ON THE ADDITIONAL
EXCISE DUTY (TAR SURCHARGE) ON CIGARETTES LEVIED BY THE UNITED KINGDOM

I. INTRODUCTION

1. On 19 December 1977 the Council adopted the Fifth Directive (77/805/EEC) on taxes other than turnover taxes, which affect the consumption of manufactured tobacco⁽¹⁾. The Directive provided for the second stage of the harmonisation of these taxes which was to run from 1 July 1978 until 31 December 1980.
2. One of the effects of Article 3 of the Directive was to amend the First Directive (72/464/EEC)⁽²⁾ by the insertion of a new Article 10(c). This accorded to the United Kingdom alone a temporary derogation permitting the charging, until 31 December 1980, of an additional excise duty on cigarettes with a tar yield of 20 mg or more per cigarette.
3. On adopting the Fifth Directive, the Council invited the Commission "to report to it before 31 December 1980, on the implications of any levy by the United Kingdom of the additional excise duty allowed by Article 10(c)".
4. In the report that follows, the additional excise duty, currently levied by the United Kingdom, is referred to as the "surcharge" or "tar surcharge".

⁽¹⁾OJ No. L 338, 28.12.1977, p. 22

⁽²⁾OJ No. L 303, 31.12.1972, p. 1

II. BACKGROUND

A. United Kingdom health policy

5. Preoccupation with the health dangers of smoking has been a world-wide phenomenon for many years. A report on these dangers was published in the United Kingdom as long ago as 1957 and has been reinforced by the 1971 report from the Royal College of Physicians, linking cigarette smoking and cancer, and by others. In its health policy, therefore, the United Kingdom government has developed a strategy aimed at dissuading non-smokers from beginning to smoke; at persuading smokers to stop smoking or to smoke fewer cigarettes; and at making cigarette smoking less dangerous for those who cannot or will not give up the habit. The government's long-term strategy, as stated by Sir George Young, Parliamentary Under-Secretary of State for Health,⁽¹⁾ has as its objective the reduction and eventually the elimination of disease caused by smoking and must use all available weapons to implement this strategy - health education, persuasion, control over advertising and, significantly, price and taxation. Ideally, there should be, he considered, a gradual increase in the price of tobacco in relation to prices generally.

B. Tar and nicotine tables

6. In particular, the United Kingdom government has accepted the results of research which has shown that cigarettes with lower tar yield are relatively less dangerous to health. Since April 1973, therefore, the British Health Departments, at about 6-monthly intervals, have issued tables showing the tar and nicotine yields of the major cigarette brands on the United Kingdom market, i.e. those with annual sales of more than 10 million cigarettes.

⁽¹⁾Fourth World Conference on Tobacco and Health held at Stockholm from 18-21 June 1979.

These tables are based on the regular testing of samples by the Laboratory of the Government Chemist. Cigarette brands on sale in the United Kingdom are listed in the tables in ascending order of tar yield (in mg per cigarette) and are divided into 5 "bands" ranging from "Low Tar" (0-10 mg) to "High Tar" (29 mg and over).

C. Voluntary agreements with the tobacco industry

7. The sampling and testing of cigarettes for these tables is carried out under voluntary arrangements agreed by the tobacco industry. It is a feature of the implementation of its health strategy that the United Kingdom government has in general proceeded by seeking and obtaining the co-operation of manufacturers and importers.

One such agreement was finalised on 28 February 1977, some ten months before the adoption by the Council of Directive 77/805/EEC which accorded the derogation authorising the surcharge. The agreement contained wide-ranging provisions including not only a code of practice on tobacco substitutes and additives and on cigarette packets and advertising (inclusion of a new Government health warning) but also the following undertakings on tar yields of cigarettes. The industry agreed:

- (a) to discontinue forthwith the advertising in press, posters and cinemas of cigarettes yielding 29 mg or more of tar, i.e. those in the Government "high tar" group;
- (b) to discontinue by 31 December 1978 the advertising in press, posters and cinemas of cigarettes yielding 23 mg to 28 mg of tar, i.e. those in the Government "middle to high tar" group;

- (c) to introduce no new brand of cigarettes yielding 23 mg or more of tar and not intentionally to raise the tar yield of any existing brand to above 22 mg;
- (d) to use its best endeavours to ensure that no brands of cigarettes will appear in the "high tar" group of the Government tar tables after 31 March 1979;
- (e) to maintain its policy of devoting a disproportionate amount of advertising in relation to total sales to the promotion of cigarettes yielding less than 17 mg of tar, i.e. cigarettes in the Government's two lower tar groups;
- (f) to continue its long standing policy of reducing, as far as is compatible with consumer acceptability, the tar yield of cigarettes.

This agreement formally expired in March 1980 but remained in force while discussions took place between the industry and the Health Departments on a new agreement. This was reached on 21 November 1980 (see paragraph 27).

D. Trend of tar yield of cigarettes on sale in the United Kingdom during period of publication of the tar tables

8. The period during which the tar tables have been published has seen a rapid fall in the market share taken by cigarettes yielding 20 mg or more of tar (the reference level for the incidence of the tar surcharge when introduced) and a pronounced decline in the number of brands in the Middle to High (23-28 mg/cig) and High Tar bands. These changes were most marked during 1973/74, i.e. during the opening months of the arrangements for preparation and publishing of the tar tables: for the year ended October 1972 the percentage of the market taken up by

cigarettes yielding 20 mg or more of tar was 74 %; for the year ended October 1974 it was 21.2 %⁽¹⁾. By the quarter ended April 1978, the figure was 12.3%. It is of note, however, that during the same period (1972-1978), although the proportions of the total male and female population over 16 who were smokers fell from 52 to 45 % and from 42 to 37 % respectively, the number of cigarettes smoked on average per smoker per week increased from 120 to 127 for males (+ 5.8%) and from 87 to 101 for females (+ 16.0%) (see Annex A).

9. At the same time as the fall in the market share of cigarettes yielding 20 mg/cigarette or more, the number of brands classified by the tar tables as being in the High Tar band (i.e. 29 mg or more) fell from 11 (out of 101) for the period July - December 1972 to 3 (out of 121) for the period February - July 1978. The number of brands in the Low Tar (under 10 mg/cig) and Low to Middle Tar (11-16 mg/cig) bands together rose for the same periods from 24 to 54.

10. It is clear from these figures that during the mid-1970s the United Kingdom's health policy as regards cigarettes was succeeding in two main areas; the proportion of the adult population who were smokers was falling and the sale of cigarettes with the higher tar yields was being phased out. Furthermore, the sales-weighted yield of tar per cigarette had fallen from 31.4 mg/cigarette in 1965 to 17.3 mg/cigarette in 1978⁽²⁾. In these circumstances, it can reasonably be asked why it was considered necessary to introduce a tar surcharge which would penalise higher tar cigarettes. Part of the answer lies in the changes in duty structure, and the consequent effect on retail prices of cigarettes, made necessary in the United Kingdom by the implementation of Community harmonisation of the tobacco excise from 1 January 1978.

(1) Estimates by UK tobacco industry.

(2) Second Report of the Independent Scientific Committee on Smoking and Health; Chairman's covering letter, 5 December 1979.

E. Structure of excise duty on cigarettes in the United Kingdom

11. Before 1 January 1978, the United Kingdom levied duty on cigarettes, in common with other tobacco products, by means of a duty on the raw tobacco leaf. From 1 January 1978, in accordance with the first directive harmonising tobacco excises⁽¹⁾, and on expiry of the five year derogation granted on British accession in 1973, the United Kingdom adopted the Community system whereby the excise is levied on the finished cigarette, in part as a percentage of retail price (the ad valorem element), in part as a fixed sum by cigarette (the specific element)⁽²⁾.

12. It was recognised at the time of adoption of the first directive that the shift from the existing UK system to the Community system would tend to reduce the duty element in the price of large cigarettes relative to small, and of non-filters to filter. On the assumption that these changes would be reflected in retail prices (which turned out to be the case) concern was expressed in the United Kingdom at the possible health implications. During discussions in the Council on the proposals for the second stage of harmonisation, the United Kingdom sought, and was accorded as part of an overall solution, a temporary derogation permitting the charging of an additional excise duty on cigarettes with a tar yield of 20 mg or more (as referred to in paragraph 3 above) to run for a period of $2\frac{1}{2}$ years from the beginning of the second stage, i.e. from 1 July 1978 to 31 December 1980.

(1) OJ L 303, 31.12.1972.

(2) These rules apply only to the tax structure: Member States remain free to fix the tax rates and overall tax level; but the proportion of total tax, including VAT, represented by the specific element must be within a range laid down in the harmonisation directives. Currently, the rules require that the specific element should be a proportion of not less than 5% and not more than 55 % of the total tax burden, including VAT.

III. THE UNITED KINGDOM TAR SURCHARGE

A. Law and regulations

13. The tar surcharge was introduced on 4 September 1978, by virtue of the Finance Act 1978, Section 1. Regulations made pursuant to that section⁽¹⁾ prescribed how the tar yield of cigarettes was to be determined for the purpose of the surcharge. Information to the trade was published in Customs and Excise public notices Nos. 173, April 1978, and 478, August 1978.

B. Basis of charge

14. The surcharge is in the form of an addition ("supplementary duty") to the specific element of the basic excise duty applying to cigarettes and is levied on cigarettes, both imported and of United Kingdom manufacture, with a tar yield of not less than 20 mg per cigarette. Like the excise duties in general, the surcharge is administered by H.M. Customs and Excise. At the date of introduction, the duty increase was 25 % of the existing specific element, i.e. the surtax was 20% of the total specific element of the excise duty. This met the requirements of Article 10 c of Council Directive 72/464/EEC, which stated that the total tax burden on the cigarettes to which the additional excise duty applied should not exceed by more than 20% the total tax burden which would have been imposed if the additional excise duty had not been levied: and that the ratio between the specific components of the excise duty and the total tax burden must be within the limits determined by the Directive.

(1) The Tobacco Products (Higher Tar Cigarettes) Regulations 1978: Statutory Instrument 1978 No. 1156.

C. Determination of tar yield: sampling and testing procedures

15. The tar yield is defined as the weight of the total particulate matter derived from the mainstream smoke of a cigarette after correction for water and nicotine alkaloid content. The procedure for testing for and determining tar yield is laid down in the 1978 Regulations⁽¹⁾. The technical conditions for the tests are identical to the standards published by the Council of the International Organisation for Standards, apart from the butt lengths adopted. For longer (King-size) filter-tipped cigarettes, the United Kingdom test conditions will tend to give a smaller tar yield per cigarette; for all other cigarettes, they will tend to give a higher-tar yield per cigarette than would the I.O.S. conditions.

16. The procedures for sampling and testing which are prescribed for the purposes of the surcharge are those in regular use, under the voluntary arrangements agreed with the industry, for production of the periodic tar and nicotine tables referred to in paragraph 6 above. For these tables, samples are invariably drawn at random, under the supervision of revenue officials at the point of manufacture or importation, and are despatched direct to the Laboratory of the Government Chemist for testing. The normal sample consists of 5 packets of 20 cigarettes of each brand, from each of which 5 cigarettes are tested. The sampling is done in each of 6 consecutive months. It is followed, on completion of the testing programme, by calculation of mean values and consultation with the traders concerned, many of whom will have carried out parallel tests on duplicate samples. There is an understanding that the results of the tests should remain confidential until any disagreement has been resolved and the tables published, a position only reached some months after the end of the 6-month sampling cycle.

(1) The Tobacco Products (Higher Tar Cigarettes) Regulations 1978: Statutory Instrument 1978 No. 1156.

17. For surcharge purposes, the manufacturer or importer has to declare whether or not the cigarettes he has made or imported have a tar yield of below 20 mg. The basic objective of the sampling and testing procedures is to check periodically the accuracy of these declarations. If the trader declares the tar yield to be 20 mg or more or where his declaration that the tar yield is below this level is supported by adequate evidence, no sampling for surcharge purposes may be necessary. Additional sampling is therefore very largely confined to minor brands of which production or importation may be irregular or to occasions when there is reason to believe that a critical change in tar yield has occurred or is about to occur. If test checks, in whatever circumstances, reveal a tar yield which is inconsistent with the declaration, further tests may be required. The existing declaration may, however, continue to be accepted, provided that the Customs and Excise are satisfied that any unexpectedly high tar yield is not deliberately produced and that any action necessary to restore it to the normal level is taken by the trader without delay. The basic criterion for determining the tar yield remains the 6-month rolling average determined by the Government Chemist for the purposes of tar and nicotine tables. In practice, the surcharge is not levied if there is reasonable doubt that the cigarettes in question have a tar yield of 20 mg or more.

18. Traders who wish to market in the United Kingdom brands which have not been previously tested, or have been subject to a specification change which could affect duty liability and who do not have access to suitable testing facilities, may request to have the tar yield determined by official testing. Where a need for this facility is shown, Customs and Excise then arrange for brands to be tested by the Government Chemist, free of charge to the trader.

19. Once a brand has been tested and its tar yield established, occasional sampling and testing will follow, the quantity and frequency depending on the timing and size of production runs or importations and the proximity of the established yield to the 20 mg threshold.

IV. EFFECTS OF THE TAR SURCHARGE

A. Objectives

20. Historically, taxes on cigarettes have had the chief aim of raising revenue. By contrast, the tar surcharge has as objective the reduction and even elimination of sales of the particular type of cigarette to which it applies, with the consequence that its success is in inverse proportion to its revenue yield.

B. Revenue yield

21. As indicated in the previous paragraph, the surcharge is not a revenue-raising measure. During the first 7 months of operation, the estimated revenue from the surcharge averaged £337,000 per month. In April 1979, however, the biggest brand which had been hitherto subject to the surcharge became no longer so and, since then, the average monthly yield from the surcharge has been less than £57,000. The total surcharge collected in the 21 months for which figures are available (September 1978 to May 1980) was about £3.15 million. By comparison, the total excise duty collected on cigarettes averages about £7 million a day.

C. Fall in market share of higher tar cigarettes

22. Price competition on the British market in recent years has been fierce, with switches in brand loyalties being sought via price differences of as little as 1 p or 2 p per packet. (If fully passed on to the consumer, the surcharge raises the price by up to 7 p a packet of 20). Consequently, the effects of the typical price of higher tar cigarettes moving overnight from, for example, 70 p to 77 p were immediate and dramatic. Prior to the introduction of the surcharge (see paragraph 8 above), the proportion of cigarettes yielding 20 mg of tar or more represented 12.3 % of total cigarette sales. During the first 4 months of the operation of the surcharge (September-December 1978) this proportion fell to 1 $\frac{1}{2}$ %. By April 1979, the share had fallen to about 0.25 %⁽¹⁾ and it has remained at about this level up to May 1980, the latest month for which figures are available.

23. Furthermore, in November 1979, the United Kingdom Department of Health announced that the number of cigarette brands in the "Middle-to-High" (23-28 mg) and "High Tar" (29 mg and over) categories had fallen to 13 out of 129 brands on the market (10.1 %), whereas, before the introduction of the surcharge in September 1978, 33 brands out of 127 (26.0 %) were in the higher tar categories. The average tar yield of all brands was said to be more than 4 % less than the previously tested sample (16.6 mg against 15.9 mg)⁽²⁾. The tar table published in May 1980, relating to the period April to September 1979, showed, for the first time, no brands in the High Tar category: the sales weighted tar yield averaged 16.6 mg/cigarette.

(1) H.M. Customs and Excise

(2) ASH Information Bulletin No. 41, 13.12.79 and UK Department of Health. The tar yield average figures of 16.6 and 15.9 are not sales weighted.

24. The fall in consumption of these higher tar cigarettes was not merely the result of declining consumption of the brands affected but rather of action taken by manufacturers and importers to alter brand specifications or to introduce new, lower tar, brands. For example, during 1978, tests confirmed 32 significant composition changes, of which 22 had the effect of reducing the tar yield of the brand in question to a level below the surcharge threshold. The great majority of these changes took place in the months immediately preceding the introduction of the surcharge, continuing the downwards trend in tax yield that had been taking place for some years (see paragraph 10 above). Moreover, it has to be remembered that reductions in tar content in accordance with the 1977 agreement were going ahead concurrently. Nevertheless, it seems reasonable to conclude that a large proportion of the specification changes resulted from the surcharge or were carried out in anticipation of its introduction.

25. Now that the market share held by cigarettes attracting the surcharge is so small a base from which to calculate, it will be difficult to ascribe any further downward movement either to the long term trend or to the effect of the surcharge. What can be said with certainty, however, is that the objective of eliminating higher tar cigarettes from the market has been virtually achieved.

D. Effects on the weighted average of tar yield of all brands

26. Between 1965 and 1978 (that is, prior to the introduction of the surcharge - see paragraph 10 above) the sales-weighted tar yield per cigarette fell from 31.4 to 17.3 mg/cigarette⁽¹⁾. For the period April to September 1979

(1) Second Report of the Independent Scientific Committee on Smoking and Health; Chairman's covering letter, 5 December 1979.

the figure had further fallen to 16.6 mg/cigarette. Moreover, it should be remembered that, by its nature, the surcharge has a once-for-all effect. The overall impact of the surcharge on average tar yield can therefore be broadly gauged by comparing the average tar level actually reached by September 1979 (16.6 mg) with a projection of the trend already observed between 1965 and 1978. According to the 1979 report cited above, the average sales-weighted tar yield was falling between 1973 and 1977 at a rate of 0.3 mg per year. Projecting this rate forward (and taking no account of any acceleration in the rate of fall which might be expected from the 1977 voluntary agreement referred to in paragraph 7) the ~~same~~ figure of 16.6 mg is obtained by the end of 1979. Even allowing for the possibility that, despite the voluntary agreement, the rate of fall would gradually slow down, the trend suggests that an average tar yield of 16.6 mg/cigarette would have been reached by the end of 1980 at the latest.

27. Bearing in mind the once-for-all effect, the conclusion to be drawn is that the surcharge may, at most, have advanced by perhaps 18 months, the date on which the level of 16.6 mg/cigarette was reached. Since that time, the surcharge has had no significant effect on the long-term trend and has served merely as a safeguard against the re-introduction of higher-tar brands. These effects are closely akin to those of a prohibition. However, given the established trend away from high-tar cigarettes, the commercial attraction to manufacturers in seeking to launch new high-tar brands is remote. Consequently, once the initial objective of the surcharge had been achieved, its value as a safeguard against the possibility of new high-tar brands became doubtful, to say the least.

Indeed, a new agreement was reached on 21 November 1980 between the British government and the two trade associations representing United Kingdom manufacturers and importers which includes the following:-

- a) There will be no media advertising of cigarettes with a tar yield of 20 mg or more.
- b) No new brand will be introduced giving a tar yield exceeding the reducing sales-weighted average of brands in the middle tar band. (Currently, that average is 18.3 mg; it is to be reduced, under this agreement, to "about 15 mg" by 31 December 1983).
- c) The tar yield of any brand will not be intentionally increased from less than 20 mg to 20 mg or more.

Furthermore, individual manufacturers had, in September 1980, given undertakings to the British government to maintain unchanged relative to the prices of other cigarettes the prices of cigarettes subject to the surcharge on its abolition.

V. TRENDS OVER COMPARABLE PERIODS OF AVERAGE TAR YIELD ON THE OTHER EEC MARKETS

28. During the last 25 years, the health hazards associated with tobacco smoking have been increasingly recognised throughout the world and many governments have, by legislation or other means, introduced a variety of measures, including restrictions on the tobacco industry, with a view to reducing the health dangers.

29. In their own ways and to different degrees the Member States of the Community have each followed that path. The United Kingdom is, however, the only Member State to publish regular official tables of tar (and nicotine) yields of individual brands (see paragraph 6). No comparison between the Member States of tar yields based on official data is therefore possible. Even if such statistics existed, no strict comparison of absolute tar levels, as distinct from trends, could be made, as the methods of measurement of the substances yielded by tobacco smoke have not been standardised throughout the Community. In any case, as the results of the intercomparability study referred to in paragraph 34 indicate, measurement of tobacco smoke condensate can vary significantly.

30. Nevertheless, the Commission has assembled such data as are available from unofficial sources (see Annex B) and these support the conclusion that in all Member States, the profile of cigarettes smoked today is very different from those smoked even 15 years ago. As in most other industrialised states, the consumption of filter-tipped cigarettes has increased (in the Community, from 51% to 80% of total consumption), the share of markets occupied by "higher tar" cigarettes has dropped dramatically and the average tar yield of cigarettes has fallen steadily and continues to fall.

31. It is worthy of note that, by the time the United Kingdom introduced the health surcharge in 1978, it was already the Member State with the highest proportion of sales of filter cigarettes. Data on the trend in the fall of tar yields in other Member States are incomplete. Nevertheless, by comparison with the trends in France and Germany for which some reliable data are available, the rate of fall of tar yield (measured in mg per year) in the United Kingdom was considerably greater. It is probably true to say that, prior to the introduction of the surcharge in September 1978, the average tar content of cigarettes on the United Kingdom market was, as it is now, among the lowest in the Community.

VI. EVALUATION OF THE EFFECTS ON HEALTH OF SMOKING TOBACCO

32. World-wide research, both clinical and epidemiological, into the effects of smoking on health has been conducted for many years. For this report, the Commission has not attempted to duplicate that research but, early in 1978, put in hand work on two topics which appeared to be of particular relevance. For each topic, two independent studies were commissioned, four independent studies in all.

33. The first two studies, carried out by the Centraal Instituut voor Voedingsonderzoek, Zeist and the Ecole de Santé Publique de l'Université Libre de Bruxelles, were to evaluate, on the basis of the literature, the effect on health of tar, nicotine and other harmful substances resulting from the consumption of tobacco.

34. The other two studies, into methods of measuring the proportion of noxious products found in the smoke of cigarettes, were carried out by the Fresenius Institut, Wiesbaden and the Laboratory of the Government Chemist, London. These studies were accompanied by an intercomparison programme performed by the above two institutes in conjunction with two others: the Bundesgesundheitsamt, Berlin, and the Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek, Apeldoorn. The programme showed that differences of up to 30% in the particulate and nicotine yields could be observed, but that these differences were not systematic: they occurred when either the same or different sampling techniques were used.

35. It is difficult to avoid the conclusion that the tar delivery of cigarette smoke cannot as yet be controlled - or indeed measured - consistently. Indirect confirmation of this view can be found in the testing procedures (see paragraphs 16 and 17 above) used by the British authorities in applying the surcharge and, in particular, in their reliance on a six-months rolling average as the basic criterion for determining the tar yield and therefore the liability to the surcharge.

36. The services of the Commission have prepared a synthesis of the evidence contained in the above studies. This is set out in Annex C.

37. In the light of this evidence, the following conclusions may be drawn:-

- Cigarette smoking has been demonstrated to be causally related to or significantly associated with several diseases. These include cardiovascular disease, cancer (in particular of the lung), chronic bronchitis and emphysema, and peptic ulcer. Of these, cardiovascular disease is the most significant cause of mortality in the Member States.
- Nicotine and carbon monoxide contained in tobacco smoke are of particular importance in view of their known adverse effects in cases of cardiovascular disease.
- Cancer is also an important cause of mortality, and both fresh tobacco smoke and tobacco smoke condensate have been shown to exhibit carcinogenic activity in animal studies.
- Intercomparability studies have shown that the results of measuring tobacco smoke condensate and nicotine in tobacco smoke vary considerably. These results lead to the conclusion that it is not at present possible to establish meaningful limits for these two components of tobacco smoke which could be uniformly applied throughout the Member States.
- From the viewpoint of public health, any approach to reduce mortality associated with cigarette smoking is to be welcomed. However, the main aim should be to reduce overall mortality by reducing cigarette smoking to a minimum. The evidence available is therefore adequate to justify a reduction in overall cigarette smoking, but is inadequate to justify the proposition that a reduction in a component of tobacco smoke, such as tobacco smoke condensate, is preferable as a public health policy throughout the Member States.

VII. IMPLICATIONS OF THE UNITED KINGDOM TAR SURCHARGE FOR THE COMMUNITY

A. The tar surcharge as model for the Community

38. In accordance with Article 10(c) of Council Directive 72/464/EEC, the United Kingdom derogation to apply the surcharge will come to an end on 31 December 1980. Leaving to one side the question of whether or not much the same result would have been obtained over a comparable time-scale via the system of voluntary agreement in application since 1977 between the Government and the British tobacco industry, the surcharge can be said to have fulfilled the objective (see paragraph 20 above) of effectively eliminating from the market cigarettes with a tar yield of 20 mg or more. In the Commission's view, the surcharge should be seen as part of the process of adaptation by the United Kingdom from a system of taxing tobacco by reference to the weight of the raw leaf to the Community system of taxing cigarettes in part by a specific amount and in part by reference to the retail price. Now that the first two stages of the harmonised system (and in particular the first, which required considerable adaptation) have been applied by the United Kingdom, the surcharge can be seen to have fulfilled its role. Indeed, as pointed out in paragraph 27 above, the virtual disappearance of higher tar cigarettes from the British market, the undertakings of manufacturers and the new voluntary agreement reached in November of this year mean that the surcharge no longer serves any useful function.

39. Nevertheless, the tar surcharge represents an experiment in seeking to influence consumers towards lower-tar cigarettes via the price mechanism and the question to be considered is whether this experiment offers a model which the Community as a whole should seek to follow.

40. It can of course be argued that the surcharge in fact operated as a prohibition, rather than a true tax, in that the rate of the surcharge was such that consumers and manufacturers simply abandoned cigarettes to which it applied. Indeed, such a conclusion has already been drawn earlier in this report. In that event, it may reasonably be asked whether a tax instrument in fact enjoys any significant advantage over a simple prohibition. It has of course been argued that a tax is a less repressive measure than a prohibition, but this argument cannot it seems be valid when, as in this case, the tax has effects closely comparable to those of a prohibition. Moreover, a tax introduces its own inequities, in that the freedom of choice implied by use of the price mechanism is more readily available to the better-off than to the poor. Finally, it is somewhat paradoxical that, in order to deal with a risk identified as of sufficient gravity to make legislation imperative, the legislation itself should be limited to influencing the individual's choice as to whether or not to incur the danger in question.

41. It should be noted that Article 36 of the Rome Treaty accords Member States considerable latitude in dealing with dangers to public health. The agreement between the British Government and the national industry, whereby manufacturers voluntarily reduce the tar yield of cigarettes, is an example of a measure aimed at protecting an interest referred to in Article 36⁽¹⁾. Such measures have a further - and not inconsiderable - advantage of dispensing with many of the procedures and formalities which are inevitably linked to a tax, even when the tax is only rarely collected.

(1) Though Article 36 cannot, of course, be used to justify a measure whose scope is wider than is necessary to protect such an interest.

B. Constraints on trade

42. But to conclude that a prohibition or some form of agreement between government and manufacturers is a more logical and administratively less complex mechanism than a tax does not wholly resolve the issue of whether or not the tar surcharge should serve as a model for future Community action in the field of smoking and health. After all, whether a given measure is a tax, a prohibition or some informal agreement between government and industry, the effect remains one of a constraint on free trade. It is in principle undesirable that the Member States should individually apply a variety of different constraints to trade in tobacco products, or that some Member States should impose constraints whilst others do not.

43. Nevertheless, the fundamental question to be posed is whether the risk of trade constraints or distortions, arising from differing policies on smoking and health in the Member States, is sufficient in itself and in the absence of Community health objectives, to require Community action to harmonise those policies. This question has been posed in other sectors - for example, in relation to the regulations governing the construction of passenger vehicles, where the risks to trade were manifestly of sufficient scope and importance to warrant the proposal and adoption of Community directives.

44. In the tobacco sector, however, it should first be noted that the Commission has received no representations whatsoever from cigarette producers, requesting Community legislation in the field of smoking and health. Trade considerations cannot therefore be regarded as of sufficient importance to require Community intervention.

C. Health considerations

45. Turning to health considerations, Section V shows that a generalised trend towards cigarettes with a lower tar yield is already well established in the Member States, and seems likely to continue independently of any Community initiatives. So far as smoking is concerned, the Council has so far limited its activities to exchanges of information about national health education campaigns and the Commission has made clear in recent Parliamentary replies (Written Questions Nos. 103/79⁽¹⁾, 645/79⁽²⁾, 1426/79⁽³⁾ and 331/80⁽⁴⁾) that it does not itself regard this area as ripe for Community action without further studies, for example, on why people smoke. In any case, a reduction in the tar yield of cigarettes is not necessarily synonymous with an improvement in the health of smokers who may, when switching to lower tar cigarettes, compensate by smoking more cigarettes, by inhaling more deeply or by smoking them further to the end. It is difficult to see how any policy instrument, national or Community, could control this aspect of consumption.

D. Practical difficulties of Community application

46. Finally, leaving to one side the question of whether or not, and whether

(1) O.J. C 185, 23.7.79

(2) O.J. C 316, 17.12.79

(3) O.J. C 126, 27.5.80

(4) O.J. C 217, 25.8.80.

on trade or health policy grounds, detailed Community provisions in the field of smoking and health are desirable, it cannot be denied that the formulation of such provisions would face formidable obstacles in practice. There is as yet no general agreement (see Section VI) on what elements in tobacco smoke constitute the most serious health hazards: nicotine and carbon monoxide are widely regarded as presenting health hazards as great, if not greater than, those presented by tar. Even if agreement could be reached on the hazards to be countered, smoking habits in the Member States differ considerably. (Note for example the differing proportions of filter cigarettes on the nine markets and the different levels of average tar yields.) It would therefore be difficult, if not impossible, to reach agreement on what constituted acceptable levels for each hazard. Lastly, the results of measuring tobacco smoke condensate and nicotine can vary so considerably (see Section VI) that, even assuming limits could be agreed for these components, it would be extremely difficult in practice to apply them in uniform fashion.

47. For these reasons, the Commission considers that Community initiatives similar in scope or form to the United Kingdom surcharge are neither necessary nor desirable at the present time.

E. Possible measures by the Community

48. As a possible alternative, the Commission has also considered whether more general policy guidelines should be proposed in relation to smoking and health; in particular, in view of the fact that the medical evidence clearly supports a policy in which the reduction of cigarette smoking overall is given priority over a reduction in the smoking of certain cigarettes, or in certain components in tobacco smoke.

49. One possibility would be for the Community to agree certain guidelines for the tax levels to apply to tobacco, or at least for the way in which tax rates should evolve relative to prices. But it should be stressed that there are no trade or fiscal considerations which would require partial or total harmonisation of tobacco taxes in advance of the harmonisation of other indirect tax rates, and the justification for such guidelines would therefore rest wholly on health considerations.

50. Agreement on such guidelines would have major budgetary and political implications for the Member States. Excises on manufactured tobacco, expressed as a percentage of total tax receipts, including social security contributions, vary between 0.71% in France (1978) and 4.79 in Ireland (1977), whilst tax incidence on cigarettes, expressed as a percentage of retail price, also varies considerably, between nearly 62% in Luxembourg and over 88 % in Denmark. Examination of the evolution of cigarette taxes in the Member States in recent years gives some indications of the difficulties likely to be encountered. The tables at Annex D show the evolution of the tax rates and of the consumer price index in the Member States since 1973. In 4 Member States tax rates have increased since 1973 by more than the consumer price index. In the other Member States, tax increases have fallen behind to such an extent that further increases of up to 59% would be required to restore the 1973 tax incidence. (It is particularly striking that, notwithstanding the British Government's concern over smoking and health, the shortfall between the increase in cigarette taxation relative to the increase in prices overall in the United Kingdom is amongst the largest in the Community). These factors suggest that the possibilities of the Member States adopting a common policy as regards either the absolute level or the evolution of cigarette taxes are slim. The Commission is, however, prepared to explore these possibilities in the light of future discussions on a Community health policy.

VIII. UNITED KINGDOM REQUEST FOR EXTENSION OF THE DEROGATION

51. During the final stages of preparation of this report, the United Kingdom requested the extension to all Member States, on a permanent basis, of the existing derogation due to expire on 31 December 1980. Before any decision is taken on the United Kingdom request, it is desirable that adequate time be given for study of this report. For this purpose, the Commission **accepts** a limited prolongation of the existing derogation in favour of the United Kingdom, for 6 months only.

IX. CONCLUSIONS

	<u>Report paragraph</u>
1. During the mid-1970s and before the introduction of the tar surcharge in September 1978, the United Kingdom's health policy was succeeding in reducing the proportion of adults who were smokers, the proportion of cigarettes with higher tar yields, and the average tar yield of cigarettes as a whole.	10
2. The effect of the impending or actual surcharge on the market was dramatic: higher tar cigarettes (yielding 20 mg or over of tar per cigarette) have been virtually eliminated from the United Kingdom market.	24-25
3. The surcharge has had little or no effect on the sales-weighted average tar yield of cigarettes.	26-27
4. The surcharge no longer serves any useful purpose as a safeguard against the resurgence of the "higher tar" sector of the market: indeed United Kingdom cigarette manufacturers and importers have given assurances to the British government which would provide just such a safeguard.	27
5. In the 8 other Member States, where no tar surcharge has been introduced, the increasing consumption of filter cigarettes, the decreasing consumption of higher tar cigarettes and the steady fall in the average tar yield of cigarettes, indicate trends similar to those in the United Kingdom.	30

Report paragraph

Cigarette smoking has been demonstrated to be causally related to, or significantly associated with, several diseases; smoke condensate (tar), nicotine and carbon monoxide are all important noxious agents. 37

Intercomparability studies have shown that the results of measuring tobacco smoke condensate and nicotine in tobacco smoke vary considerably. 37

It is not at present possible to establish meaningful limits for the "tar" and nicotine components of tobacco smoke which could be uniformly applied throughout the Community. 37

The evidence available on the links between smoking and ill health is adequate to justify a reduction in overall cigarette smoking but is inadequate to justify the proposition that a reduction in a component of tobacco smoke, such as tobacco smoke condensate, is preferable as a public health policy throughout the Member States. 37

Conceived in the context of the United Kingdom's adaptation of its system of tobacco taxation to that of the Community, the surcharge has fulfilled its role. 38

Report paragraph

- | | | |
|-----|---|----|
| 11. | A general trend towards cigarettes with lower tar yields is already well established in the Member States and seems likely to continue independently of any Community initiatives. | 45 |
| 12. | Community initiatives similar in scope or form to the United Kingdom surcharge are neither necessary nor desirable at the present time. | 47 |
| 13. | The Commission is prepared to explore the possibility of framing proposals providing for the convergence or the indexation of tobacco excise rates in the Member States. Obtaining Community agreement to such proposals is, however, likely to be extremely difficult. | 50 |
| 14. | In order to provide sufficient time for the study of this report, the Commission accepts a limited prolongation of the existing derogation in favour of the United Kingdom, for 6 months only. | 51 |

SMOKING IN THE UNITED KINGDOM

Table 1

Prevalence

%

Percentage of population aged 16 and over who are current cigarette smokers				
	1972	1974	1976	1978
Males	52	51	46	45
Females	41	41	38	37

Table 2

Consumption of cigarettes

Average number of cigarettes smoked per smoker (aged 16 or over) per week				
	1972	1974	1976	1978
Males	120	125	129	127
Females	87	94	101	101

Source (Tables 1 and 2) : United Kingdom Office of Population Censuses and Surveys Monitor GHS 79/1. (cited in ASH Information Bulletin 30, 21.6.1979).

(referred to in paragraph 30)

TRENDS IN CONSUMPTION OF FILTER AND HIGHER-TAR CIGARETTES AND IN AVERAGE TAR YIELDS IN THE MEMBER STATES

Table 3

Proportion of filter cigarettes in total sales of cigarettes

(%)

Year	B	DK	D	F	IRL	IT	NL	UK
1965	50.0	39.1	81.6	24.0	35.0	39.6	19.5	53.0
1970	61.8	47.8	84.2	38.3	66.7	60.0	37.0	78.3
1971	64.0	48.3	84.8	42.4	71.0	66.8	40.3	79.8
1972	66.9	49.5	85.1	46.6	74.2	71.8	43.7	81.7
1973	68.0	51.9	85.2	50.9	78.0	80.1	46.8	83.0
1974	72.2	52.6	84.8	53.8	80.1	87.5	49.0	84.5
1975	75.1	53.5	86.0	56.7	81.0	84.3	50.9	86.6
1976	77.2	56.6	86.4	59.9	81.3	85.0	54.0	88.1
1977	78.9	59.7	86.9	58.4	-	86.6	55.7	89.5
1978	79.1	60.6	87.2	58.3	85.0	86.7	57.9	90.5

Source - Bron : "Maxwell International Estimates"

Table 4

Proportion of "higher tar"⁽¹⁾ cigarettes in total sales of cigarettes

%

Year	Tar yield in mg/cigarette ⁽¹⁾				
	20 or more				15 or more
	B	D	NL	UK	D
1972		14		74	63
1973	58		95	49	
1977		11		13 ⁽²⁾	12
1978	13		10	{ 12 ⁽²⁾ 2 ⁽³⁾ }	
1980				< 1	

(1) The term "higher tar" has no precise meaning in this context and is used merely for convenience. It is emphasised that the values shown in the table may not be strictly comparable because methods of measurement of tar yield have not been standardised throughout the Community

(2) Pre 4.9.78

(3) Post 4.9.78

Source: UK industry estimates.

Table 5Average tar yield⁽¹⁾ of cigarettes

Year	(mg/cigarette)			
	DK	D	F	UK
1961		e. 28.3		
1965			a. 30.5	b. 31.4
1966		e. 22.7		
1970		e. 18.2		
1973				b. 18.7
1975		e. 15.2		
1976				a. 18.6
1978			a. 20.0	b. 17.3
1979				d. 16.6
1980	c. 25.3			

Sources:

- a. Tobacco-Health Working Group of the EEC Consultative Committee on raw tobacco: report of meeting on 21 November 1979.
- b. Independent Scientific Committee on Smoking and Health: Second Report, 1979; and Chairman's covering letter.
- c. Danish Ministry of Fiscal Affairs. (Figure based on 88 % of the market)
- d. UK Department of Health and Social Security.
- e. Federation Belgo-Luxembourgeoise des Industries du Tabac: Revue, September 1979.

⁽¹⁾ See footnote(1) to Table 4.

EVALUATION OF THE EFFECTS ON HEALTH
OF SMOKING TOBACCO

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3. THE CONSTITUENTS OF TOBACCO SMOKE AND THEIR EFFECTS
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 - 5.7 Cigarette smoking at work.
6. CONCLUSIONS. (Set out in paragraph 37 of the main report).

1. INTRODUCTION

This annex summarises the effects on health from smoking tobacco. It makes particular reference to cigarette smoking and the effects on human health of tar and other constituents of cigarette smoke.

2. THE CONSTITUENTS OF TOBACCO SMOKE AND THEIR ANALYSIS

2.1 Constituents

The term "tobacco smoke" includes both a gaseous and a particulate phase.

The main constituents of the gaseous phase include carbon monoxide, oxides of nitrogen, acetaldehyde and acrolein.

In quantitative terms the main constituents of the particulate phase are water and nicotine.

A recent compilation of the many compounds, reported as being present in tobacco smoke lists more than 2300 compounds most of which reside in the particulate (tar or condensate) fraction.

2.2 Analysis

As it is not practical to measure all these compounds routinely, three parameters (tar, nicotine and carbon monoxide) are generally used to characterise smoke yields of cigarettes. For analytical purposes smoking machines of varying designs have been developed to imitate the principles of human smoking in a reproducible way. Some countries have national standards for smoking, smoke collection and analysis, but ISO has, as yet, only standardized the principles of the smoking machine operation. Different methods may produce different results and the main factors affecting such differences are likely to be:

- a. preconditioning of cigarettes
- b. smoking room environment
- c. smoking machine design and operation
- d. smoke collecting or trapping systems
- e. butt length
- f. methods of analysis for water, nicotine and CO
- g. day-to-day variation in performance of a, b, c, d and f.

2.3 Conclusions from interlaboratory trials

A Working Group which included representatives from four independent laboratories within the Community was set up by the Commission services. This Working Group was charged with the organization and performance of interlaboratory collaborative trials and selecting the factors requiring evaluation in assessing the toxicity of tobacco smoke. It was decided to give particular attention to the yields of tar, nicotine and carbon monoxide (CO). Two collaborative trials were

undertaken and differences in the results obtained from different combinations of smoking machines, trapping systems and analytical methods were reviewed. The findings relate to two trials using five brands of filter cigarettes in, respectively, three and four laboratories with three smoking machines and three types of trapping systems. 6000 cigarettes were examined over a period of several months. For carbon monoxide, the results were reasonably consistent across all laboratories.

For nicotine, laboratories using different machines and methods found differences of about 0.3 mg at the 1.5 mg level.

When using the same trapping system there were differences in tar yield of up to 15 % between laboratories using different machines. Within two laboratories there were differences of up to ~~15~~ 15 % according to whether filters or electrostatic traps were used. Using different machines and traps, mean values between 14 and 19 mg tar per cigarette have been found for two individual brands.

Within laboratories using one type of machine and trap and their own analytical methods the range of results for these analytes is very much smaller.

Although the Working Group has assessed the influence of the most relevant factors, the trials were of a limited nature and the explanations of the differences in analytical results reported by the various laboratories are far from complete. There are at present insufficient data to derive accurate correlation factors for each analyte. These analytical differences are not expected to affect national ranking between brands but do not permit pooling national data to set up a Community ranking system. For the latter purpose, in the absence at this time of agreed international procedures, correlation factors between different national methods will have to be developed.

3. THE CONSTITUENTS OF TOBACCO SMOKE AND THEIR EFFECTS

Tobacco smoke has been shown to contain enzyme inducers, to be carcinogenic and to possess irritant properties. The enzyme inducers include polynuclear aromatic hydrocarbons, nicotine, cadmium, some pesticides and acrolein of which the most potent inducers are probably aromatic hydrocarbons which are very persistent in tissues.

Tobacco smoke condensate was found to have strong mutagenic activity, which could not be explained by its benzo(a) pyrene or nitrosamine content; nitrogen-containing compounds are thought to be responsible for this mutagenic activity; some other pyrolysis products of amino acids are regarded as possible comutagens.

Tobacco smoke condensate has shown alkylating potential. Methyl chloride, one of the major components of smoke, is a known alkylating compound and a mutagen.

The carcinogenic activity of fresh tobacco smoke as such has been unequivocally demonstrated in inhalation studies with Syrian golden hamsters, in which early invasive cancer of the larynx was found following repeated exposure to cigarette smoke.

The carcinogenic properties of tobacco smoke condensate (TSC) have been demonstrated in several animal species by skin painting, subcutaneous injection, application on the mucosa of the oral cavity, trachea or cervix and intratracheal instillation.

Tobacco smoke condensate has been found to contain strong tumour-enhancing activity, established promoters, co-carcinogens and initiators of tumours.

Tobacco smoke has a ciliostatic, cytotoxic and mucous-producing activity due to the presence of irritant substances such as acrolein, acetaldehyde, phenols, hydrogen cyanide, ammonia, acids and nitrogen and sulphur oxides. These irritants in tobacco smoke may encourage infection and may be responsible for a prolonged contact of the respiratory epithelium with carcinogens. They induce immediate coughing during or after inhalation of tobacco smoke and may be responsible for chronic bronchitis and emphysema in smokers.

Nicotine is a pharmacologically active alkaloid, which acts on the central and the automatic nervous system, and which enhances the production of adrenaline. Because of this adrenaline release, nicotine indirectly influences the heart, the peripheral blood vessels, the thrombocytes, the clotting of the blood and also the metabolism of carbohydrates and fats, but it is not possible to ascribe to nicotine - in the amounts present in smoke - chronic effects on the development of arteriosclerosis. Although nicotine in smoke has no adverse effect on a healthy heart, its absorption by someone suffering from coronary sclerosis can result in an acute attack of angina pectoris as a consequence of lack of oxygen.

Nicotine has been shown to be the compound in tobacco smoke that is most likely responsible for the reinforcing properties of tobacco. It has been demonstrated that nicotine readily crosses the blood-brain barrier. Tobacco smoking has been found to prevent deterioration of reaction time, and improves learning and efficiency. These effects may be of benefit to smokers and may reinforce maintenance of the smoking habit. There is some evidence that the withdrawal syndrome is more severe in women than in men. This may at least partly be responsible for less successful cessation of smoking among women.

Carbon monoxide (CO) is mainly formed as a result of incomplete combustion of tobacco. Its affinity for haemoglobin (= the oxygen-carrying red pigment of the blood) is 200 times higher than that of oxygen itself. Heavy smokers often have as much as 15% carboxyhaemoglobin (COHb) in their blood, which means a reduced capacity for transport of oxygen and for the liberation of oxygen from oxyhaemoglobin. This disturbance of both the transport and utilization of oxygen may lead to hypoxia, which particularly may affect organ systems with a relatively great need of oxygen such as the heart and the central nervous system, and also the foetus.

Whether exposure of humans to CO as such may lead to atherosclerosis is still doubtful. However, CO most likely is a factor which together with high fat diet, stress, hereditary disposition and tobacco smoke compounds other than CO, is responsible for the high incidence of cardiovascular disease in the modern Western society.

4. PASSIVE SMOKING

Sidestream smoke is richer in certain combustion products than mainstream smoke. Sidestream smoke may contain for example 5 times more carbon monoxide, 3 times more tar and nicotine, 4 times more benzo-(a) pyrene and 50 times more ammonia than mainstream smoke, and also much higher amounts of nitrosamines. In spite of relatively high concentrations of certain toxic agents in sidestream smoke, the levels measured even in ill-ventilated spaces (workplace, offices, bars and restaurants) most probably have no adverse physical effects in healthy adults. Passive smoking is more "unpleasant" (irritation of eyes, nose and throat due to aldehydes, ammonia and nitrogen oxides) than "unhealthy" to healthy adults.

5. EPIDEMIOLOGICAL DATA ON THE HEALTH EFFECTS OF CIGARETTE SMOKING

People who smoke cigarettes report more illness and disability than people who never smoked cigarettes.

As regards the overall mortality ratio, for current male US cigarette smokers it is about 1.7 compared to nonsmokers (i.e. 70 % excess mortality). Although the lung cancer mortality ratio for cigarette smokers - as compared to non-smokers - is much higher than the mortality ratio for cardiovascular disease, numerically, the excess mortality from cardio-vascular disease is much higher because diseases of heart and blood vessels also occur very frequently among non-smokers. This implies that the major cause of death from cigarette smoking is cardiovascular disease.

Cigarette smoking has been demonstrated to be causally related or significantly associated with several diseases. These include cardiovascular disease, cancer (in particular of the lung), chronic bronchitis and emphysema, and peptic ulcer. In addition it has effects on metabolism, on the immune system, on the foetus, and probably represents a genetic risk. Smoking may also interact with exposure to other agents at work to induce or increase adverse health effects.

There is some evidence that young infants, patients with chronic heart or lung disease are at particular risk of suffering from health effects from passive smoking.

5.1 Cardiovascular diseases

Cigarette smoking in man is associated with fibrotic and hyaline changes in small arteries and arterioles in the myocardium.

In many developed countries coronary heart disease is the main cause of death. Cigarette smoking has been proven to be a causative risk factor - though not the only risk factor - for non-fatal myocardial infarction, sudden cardiac death, coronary heart disease and arteriosclerotic peripheral vascular disease.

Epidemiological data on the association between smoking and angina pectoris and cerebrovascular disease are inconclusive.

No epidemiological data are available on a possible association between the consumption of cigarettes with a high carbon monoxide yield and the occurrence of ischaemic heart disease, but this compound is known to play a major role in the development of cardiac and vascular diseases.

5.2 Cancer

As regards lung cancer:

- Cigarette smoking is the major cause of lung cancer in both men and women who have a 10-fold higher risk of death from lung cancer than non-smokers.
- A dose-response relationship exists between the risk of developing lung cancer and the number of cigarettes smoked per day (a 20-fold risk among persons smoking two packs or more per day).
- The risk of lung cancer is inversely proportional to the age at which smoking was started, it increases with increasing degree of inhalation and among ex-smokers declines as the interval of abstinence increases. In women it is increasing more rapidly than any other cause of death.

As regards other cancers:

- Many epidemiological studies have demonstrated that cigarette smoking is a significant causative factor in the development of cancer of the larynx, oral cavity (lips, tongue, palate, gums, buccal mucosa, oropharynx) and oesophagus. A synergism between the use of alcohol and cigarette smoking in the induction of laryngeal, oral and oesophageal cancer has been demonstrated.
- Numerous retrospective studies have shown a significant association between cigarette smoking and bladder cancer in men and women, the risk is about twice as high as for non-smokers. An association has also been found for cancer of the kidneys in men.
- According to both pro- and retrospective epidemiological studies, there is a significant association between cigarette smoking and cancer of the pancreas. The risk of developing pancreas cancer is approximately five times higher for a heavy smoker (two packs a day) than for a non-smoker.

5.3 Chronic bronchitis and emphysema

Numerous retrospective and prospective studies have shown higher mortality rates from chronic bronchitis and emphysema among cigarette smokers than among non-smokers. There is a good deal of evidence that not only adult but also young cigarette smokers have respiratory complaints (regular cough, phlegm production, wheezing) more frequently than non-smokers. Pulmonary dysfunction and chronic obstructive lung disease are associated with cigarette smoking.

5.4 Effects on the immune system

That cigarette smoking can affect the immune system has been shown both in man and experimental animals. In smokers the number of alveolar macrophages is higher than in non-smokers; physiological and ultrastructural changes have been observed in macrophages collected in smokers.

Humoral immunity has been found to be reduced in smokers. Alterations in the cell-mediated immunity, leucocytosis and hypereosinophilia have also been reported to occur in smokers. An increased incidence of clinical influenza has been noticed among smokers and more cases of urinary tract infections in smoking than in non-smoking women.

Tobacco and tobacco smoke extracts possess antigenic activity: several tobacco antigens have been isolated. A variety of clinical conditions have been attributed to allergic reactions to tobacco or its smoke (asthma, rhinitis, dermatitis, migraine).

5.5 Genetic risks

In a recent review on the genetic risks of cigarette smoking an expert group of the International Commission for Protection against Environmental Mutagens and Carcinogens (ICPEMC) concluded that:

1. Cigarette smoke contains many mutagens. Smokers who inhale must be expected to absorb significant quantities of mutagens, and at least some of them may be expected to reach the gonads.
2. There is experimental evidence which suggests the occurrence of genetic damage to lymphocytes and spermatozoa of smokers.
3. There is one study on heritable effects in humans which indicates a significant correlation between paternal smoking and the rate of perinatal mortality and also the frequency of congenital abnormalities.

It has been clearly demonstrated that compounds of tobacco smoke cross the placenta and affect the foetus and subsequently the neonate. Babies from women who smoked during pregnancy are on the average 200 g lighter than babies born to comparable women who did not smoke. Retardation of foetal growth is a consequence of a direct effect of cigarette smoke compounds on the foetus such as nicotine, cyanide, carbon monoxide.

Smoking during pregnancy is a definite risk factor for spontaneous abortion and for foetal and neonatal death.

5.6 Effects on metabolism

A series of recent studies have clearly demonstrated that women who smoke and use oral contraceptives have a considerably greater risk of myocardial infarction than non-smokers who take the pill. This relative risk increases with the number of cigarettes smoked per day. There is also some evidence that cigarette smoking alters the metabolism of both micro-nutrients (e.g. vitamin C, B₆ and B₁₂) and macro-nutrients such as lipids, proteins and carbohydrates.

5.7 Cigarette smoking at work

Smoking at work may interact with exposure to other agents at work to induce or increase adverse health effects:

- Tobacco products may serve as vectors by becoming contaminated with toxic compounds found in the workplace (e.g. formaldehyde, organotin, methyl parathion, lead and inorganic fluorides and mercury).
- Workplace chemicals may be transformed into more harmful agents by smoking: polymer fume fever. This disease is attributed to the decomposition of polytetrafluorethylene by lit cigarettes, and inhalation of the decomposition products together with the smoke.
- Toxic constituents of tobacco smoke may also occur in the workplace and thus may increase exposure to the agent (carbon monoxide, hydrogen cyanide and methylene chloride).
- Additive effect of smoking and occupational exposure. Coal dust (chronic obstructive lung disease), cotton dust (reduced pulmonary function) and chlorine (reduced diffusing capacity of the lung).
- Synergistic effect of smoking and toxic materials found at the workplace. A dramatic example is the situation with occupational exposure to asbestos. Asbestos workers who smoke have several times the lung cancer risk of other smokers and up to 90 times the risk of non-smokers not exposed to asbestos. In addition, recent studies have shown that asbestos workers who smoke have a higher risk of developing asbestosis than those workers who do not smoke.

In uranium miners cancer of the respiratory tract among smoking miners occurred 9 times more frequently than among non-miners with similar smoking habits.

In rubber workers the combination of smoking and occupational exposure significantly increased the probability of developing early pulmonary disability.

A significantly higher incidence of chronic bronchitis was observed among smoking gold miners (50%) than among non-smoking miners (8%).

6. CONCLUSIONS

- See paragraph 37 of the report.

Annex D

(referred to in paragraph 50)

COMPARISON OF EXCISE DUTY RATES ON CIGARETTES IN THE MEMBER STATESTable 6Incidence of excise duty (including VAT) on cigarettes

%

Excise duty (including VAT) on cigarettes in Member States as a proportion of the average for the Community 1973 - 1980										
	Average duty in EUA ⁽¹⁾	B	DK	D	F	IRL	I	L	NL	UK
20 cigarettes at 1.7.73	0.376 = 100	69	235	168	59	71	52	58	91	97
20 cigarettes at 1.7.80	0.728 = 100	84	262	109	50	91	50	50	86	117

(1) EUA rates in force on 1.7.1980

Table 7Comparison of excise duty (including VAT) on cigarettes with consumer price indices

Indices of the evolution of excise duty (including VAT) on cigarettes in Member States compared with the respective price indices, 1973 to 1980										
		B	DK	D	F	IRL	I	L	NL	UK
A	20 cigarettes at 1.7.73	100	100	100	100	100	100	100	100	100
	20 cigarettes at 1.7.80	236	216	126	165	248	186	168	182	234
B	Consumer price index at 1.7.73	100	100	100	100	100	100	100	100	100
	Consumer price index at 1.7.80	173	209	138	210	268	296	163	164	286
$\frac{B - A}{A} \times 100$	Change in 1980 duty rate required to match change in price index 1973/80. (%)	-27	-3	+10	+27	+8	+59	-3	-10	+23

Source (Tables 6 and 7): Based on tables from the Report from the Commission to the Council on scope for convergence of tax systems in the Community (COM (80) 139), Bulletin of the European Communities, Supplement 1/80, Tables 5 and 6.

