

THE MONOPOLIES COMMISSION

Man-made cellulosic fibres

A report on the supply of
man-made cellulosic fibres

*Presented to Parliament in pursuance of
section 9 of the Monopolies and Restrictive Practices
(Inquiry and Control) Act 1948*

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† Note by the Board of Trade. Professor Devons died on 28 December 1967.

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Introduction

(i) The following report on the supply in the United Kingdom of unprocessed man-made cellulosic fibres (hereinafter referred to as cellulosic fibres or man-made cellulosic fibres) is submitted in compliance with section 2(1) of the Monopolies and Restrictive Practices (Inquiry and Control) Act 1948 (as amended). The reference, which is reproduced in Appendix 1, was received from the Board of Trade on 2 July 1965.

(ii) We have received evidence from Courtaulds Limited and Lansil Limited, the only manufacturers in the United Kingdom of cellulosic fibres. Members of the Commission and of the staff visited some of Courtaulds' factories.

(iii) We have also received evidence from Imperial Chemical Industries Limited, Cigarette Components Limited (the principal purchaser in the United Kingdom of acetate tow), trade associations representing users of various types of cellulosic fibres, as well as individual users, a large retail distributor and agents for foreign producers. From some of these witnesses we took oral evidence after we had considered their written submissions. A list of our principal sources of evidence is given in Appendix 2.

(iv) Courtaulds Limited sought permission to be represented on any occasion on which evidence was given by Cigarette Components Limited and to be given the right to cross-examine on these occasions. Courtaulds Limited said that it considered this to be necessary to protect itself against 'possible unfair attack from a biased source' and to enable us to 'form a fair judgment of the true facts'. It further requested that, if permission to cross-examine were not given, it should be shown the transcript of any evidence given by Cigarette Components Limited. We decided that it would not assist the conduct of our inquiry to accede to either of these requests, but the criticisms made by Cigarette Components Limited were shown to Courtaulds Limited and the latter's comments on them have been fully taken into account in our report.

(v) On 27 October 1966 we informed Courtaulds Limited of our provisional conclusion that conditions to which the 1948 Act (as amended) applies prevailed in respect of the supply of cellulosic fibres in the United Kingdom; we notified the company of the respects in which it might be contended that the conditions, or all or any of the things done as a result of or for the purpose of preserving the conditions, operated or might be expected to operate against the public interest. Courtaulds Limited made certain representations to us in writing and in June 1967 representatives of the company attended a hearing for the purpose of discussing these matters with us. At this meeting the company was represented by counsel.

(vi) We wish to record our appreciation of the assistance given to us by Courtaulds Limited and all the others who have provided us with the information required in our investigation. Some of the information relates to confidential business matters and we have been careful not to disclose it in our report unless it is essential for a proper understanding of the issues.

(vii) The classifications adopted for statistical purposes by the Governments of producing countries (including the United Kingdom) are not in many cases appropriate to the terms of our reference. We have accordingly found it necessary to make extensive use of figures contained in *Textile Organon*, a periodical published by the Textile Economics Bureau Inc. of New York; in this we have followed the practice of the fibre producers themselves.



CHAPTER 1

General

1. There are two principal types of man-made cellulosic fibres, viscose and acetate*. Cellulosics were historically the first class of man-made fibre to be produced. More recent introductions (of non-cellulosic type) include nylon, acrylic and polyester fibres. Cellulosic fibres are derived from cellulose (in the form of wood pulp or cotton linters) which, although insoluble in water and many other liquids, can, when transformed into soluble compounds, be dissolved by a solvent. Thereafter the cellulose solution passes through the small holes of a spinnerette (an apparatus roughly resembling the rose on a watering can) and solidifies on emerging to form a continuous thread composed of as many filaments as there are holes in the spinnerette. In the case of viscose this is done by immersing the spinnerette in an acid bath which reacts chemically with the solvent caustic soda; in the case of acetate it is done by extruding the solution through the spinnerette into a warm atmosphere so that the solvent (acetone or methylene chloride) is evaporated. The denier† of the thread is determined by the concentration of the spinning solution, the rate at which it is extruded through the spinnerette and the speed at which the yarn is collected. In the context of our reference we consider cellulosic fibres as being 'unprocessed' at the point at which they normally leave the factory in which they were produced in some form of package, whether as continuous filament (CF) yarn‡, in cut lengths as staple fibre, or as tow (a thick rope of continuous threads which is normally afterwards cut into staple lengths by the purchaser).

2. In 1966 world production of the principal textile fibres totalled nearly 39,000m lbs. Of this total raw cotton accounted for nearly 23,000m lbs; man-made fibres as a whole for nearly 13,000m lbs; viscose and acetate alone for over 7,000m lbs. The principal world producers of viscose and acetate fibres outside Eastern Europe and China were the United States of America (1,519m lbs), Japan (1,087m lbs), Western Germany (602m lbs), the United Kingdom (476m lbs) and Italy (398m lbs)§ (see Appendix 3).

* Cuprammonium, a type of cellulosic fibre, is no longer produced in this country and is of little importance to our inquiry.

† Denier = the weight in grammes of 9,000 metres of thread or yarn.

‡ Trade usage applies the term 'yarn' both to unprocessed CF fibre (which on leaving the factory in some form of package may be woven or knitted without further processing) and to the product of staple fibre or tow after it has been processed by spinning on conventional cotton-, flax-, woollen- or worsted-type machinery. The term spinning is itself commonly used to refer both to this conventional spinning process and to the extrusion through spinnerettes of cellulose or cellulose derivatives in solution to form unprocessed fibre. In our report we use the term 'yarn' to mean continuous filament fibre and the term 'spun yarn' to mean yarn spun from staple fibre on conventional machinery.

§ *Textile Organon*, June 1967. Figures exclude acetate tow.

3. United Kingdom production of man-made cellulosic fibres in 1966 consisted of:

	<i>lb million</i>
Viscose textile yarn	51
Viscose industrial yarn	79
Viscose staple fibre and tow	271
Acetate yarn	70
Acetate staple fibre and tow	25
	496

Imports in that year amounted to 37m lbs and exports to over 106m lbs (see Appendix 3); about one-half of the exports were to countries in Eastern Europe and to China.

4. Imports into the United Kingdom are subject to duty on a specific charge or a specific charge plus ad valorem basis, the rate varying according to the type of fibre concerned. Duty calculated on this basis represents a proportion varying from 22 per cent to 37.5 per cent of list prices ruling in the domestic markets of the principal producing countries*. Further particulars of United Kingdom duties, of those applicable in EFTA and EEC countries and in the United States and Japan as at June 1967, and of the effects of reductions to be effected in the five years 1968 to 1972 as a result of the Kennedy Round of trade negotiations 1964 to 1967, are given in Appendix 4.

5. Cellulosic fibres are used for a variety of purposes, of which the following are the most important in the United Kingdom at the present time (1966-1967):

Type of fibre	Use(s)	%
VISCOSE		
Textile yarn	Linings	36
	Narrow fabrics	12
	Furnishing fabrics	8
	Dress fabrics	6
	Hosiery	4
Industrial yarn	Tyre cord fabric	92
Staple	Carpets	36
ACETATE		
Yarn	Linings	37
	Outerwear	29
Staple and tow	Cigarette filter tips (100 per cent of acetate tow, a specially refined product, is used for cigarette filter tips)	84

A comparable breakdown is not practicable for the balance of viscose staple, which is used to a greater or lesser degree in most textile products. Fifty per cent of it goes to the short staple cotton-type spinning section of the textile trade and 14 per cent to the long staple flax-type spinning section. In recent years cellulosic fibres have increasingly been used in blends with natural fibres and with other types of man-made fibres.

6. The figures given in paragraphs 2 to 5 are all based on weight; in terms of value the relative importance of the various fibres would differ appreciably as acetate is a dearer fibre than viscose.

* The percentages relate to standard products. The proportions are lower on speciality products, which are higher priced.

7. There are two manufacturers of man-made cellulosic fibres in the United Kingdom Courtaulds Limited, which produces a wide variety of fibres of all the types specified, and Lansil Limited, a member of the Monsanto group, which produces only diacetate yarn. In 1966 Courtaulds was responsible for about 98 per cent of all United Kingdom production of cellulosic fibres and for virtually all exports. Both producers have (though in varying degrees) vertical interests in the textile industry. Courtaulds' textile interests are described in Chapter 4. Lansil is engaged in the manufacture of knitted and woven fabrics from both acetate yarn and synthetic fibres; the company's textile activities absorb rather less than 10 per cent of its own acetate yarn production*.

8. Cellulosic fibres are normally supplied by the manufacturer direct to the immediate user, that is the spinner (in the case of staple fibre) or the weaver or knitter (in the case of yarn); in view of the traditional structure of the textile industry fibres may pass through many hands before reaching the ultimate consumer†. The fibre manufacturer supplies at list price‡, without quantity or other terms, but surcharges are made for very small quantities and/or special services. Some continental producers are represented by agents in this country, but the latter seldom if ever actually handle the goods concerned.

9. The principal trade associations concerned with the production, use and converting of cellulosic fibres are the Man-made Fibre Producers' Committee, the Cotton and Rayon Merchants' Association, the Silk and Man-made Fibres Users' Association, and the United Kingdom Textile Manufacturers' Association. These, together with four other bodies, form the British Man-made Fibres Federation. Research on behalf of the industry is carried out by the Cotton, Silk and Man-made Fibres Research Association (Shirley Institute). Courtaulds, with its subsidiaries, is an active member of all. Lansil is a member of those appropriate to its interests.

CHAPTER 2

Development of the Cellulosic Fibres Industry

General§

10. The possibility of producing man-made fibres by a process analogous to that by which the silkworm transforms cellulose (in the form of mulberry leaves) into natural silk was recognised theoretically as early as the seventeenth century, although without any immediate practical application. During the nineteenth

* Lansil also had garment-making interests until 1965.

† For example, spinner; weaver; merchant converter; bleacher, dyer or printer; garment manufacturer; wholesaler; retailer.

‡ The list prices of both United Kingdom producers for comparable products are usually the same. Lansil has said 'it was found generally that costings resulted in similar prices to those of competitors'.

§ Paragraphs 10 to 14 are based principally on information given by L. G. Fauquet: *Histoire de la Rayonne et des Textiles Synthétiques*. (Paris, Armand Colin, 1960.)